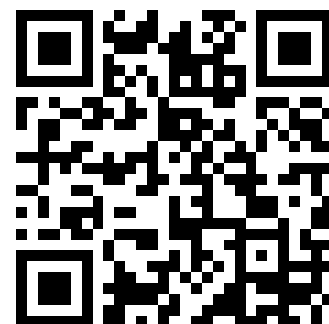

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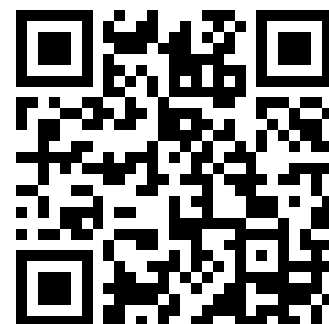
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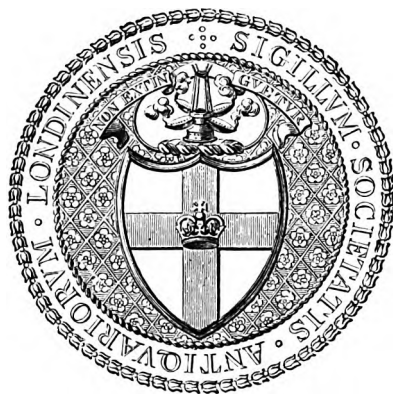


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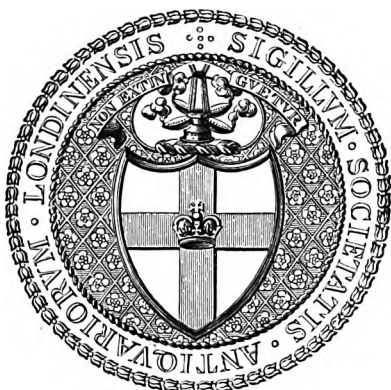
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TABLE OF CONTENTS

	PAGE
I.— <i>Excavations at Caerwent, Monmouthshire, on the Site of the Romano-British City of Venta Silurum, in the year 1908. By THOMAS ASHBY, Esq., D.Litt., F.S.A., ALFRED E. HUDD, Esq., F.S.A., and FRANK KING, Esq.</i>	1-20
II.— <i>On a Triptych of the Twelfth Century from the Abbey of Stavelot in Belgium, containing portions of the True Cross. By CHARLES HERCULES READ, Esq., LL.D., President</i>	21-30
III.— <i>The Manor of Eia, or Eye next Westminster. By WM. LOFTIE RUTTON, Esq., F.S.A.</i>	31-58
IV.— <i>On the Fellows of the Society of Antiquaries of London who have held the office of Director. By SIR EDWARD WILLIAM BRABROOK, C.B., Vice-President and Director</i>	59-80
V.— <i>The Church of Edward the Confessor at Westminster. By the Very Rev. JOSEPH ARMITAGE ROBINSON, D.D., F.S.A., Dean of Westminster</i>	81-100
VI.— <i>On the Use of the Deer-Horn Pick in the Mining Operations of the Ancients. By HORACE W. SANDARS, Esq., F.S.A.</i>	101-124
VII.— <i>The Present Condition of the Ancient Architectural Monuments of Cyprus, 1910. By GEO. JEFFERY, Esq., Curator of Ancient Monuments</i>	125-136
VIII.— <i>On the Early Use of Arabic Numerals in Europe. By G. F. HILL</i>	137-190
IX.— <i>St. Paul's School before Colet. By A. F. LEACH, Esq., M.A., F.S.A.</i>	191-238
X.— <i>On a Bronze Age Cemetery and other antiquities at Largs, Ayrshire. By ROBERT MUNRO, Esq., M.D., LL.D., Local Secretary for Scotland</i>	239-250
XI.— <i>The Album Amicorum. By MAX ROSENHEIM, Esq., F.S.A.</i>	251-308
XII.— <i>On the Stone Bridge at Hampton Court. By C. R. PEERS, Esq., M.A., Secretary</i>	309-316
XIII.— <i>Excavations about the Site of the Roman City at Silchester, Hants, in 1909. By W. H. ST. JOHN HOPE, Esq., M.A., and MILL STEPHENSON, Esq., B.A., F.S.A.</i>	317-332
XIV.— <i>The Discovery of Prehistoric Pits at Peterborough, by G. WYMAN ABBOTT, Esq.; and the Development of Neolithic Pottery, by REGINALD A. SMITH, Esq., B.A., F.S.A.</i>	333-352

TABLE OF CONTENTS

	PAGE
XV.— <i>Canterbury Cathedral Choir during the Commonwealth and after, with special reference to two oil paintings.</i> By W. D. CARÖE, Esq., M.A., F.S.A.	353-366
XVI.— <i>Exchequer Tallies.</i> By HILARY JENKINSON, Esq., B.A., F.S.A.	367-380
XVII.— <i>On Italian Armour from Chalcis in the Ethnological Museum at Athens, by CHARLES FFOULKES, Esq., based on photographs, notes, and measurements made by RAMSAY TRAQUAIR, Esq., A.R.I.B.A.</i>	381-390
XVIII.— <i>Mediaeval personal ornaments from Chalcis in the British and Ashmolean Museums.</i> By O. M. DALTON, Esq., M.A., F.S.A.	391-404
XIX.— <i>Excavations at Caerwent, Monmouthshire, on the Site of the Romano-British City of Venta Silurum, in the years 1909 and 1910.</i> By THOMAS ASHBY, Esq., D.Litt., F.S.A., ALFRED E. HUDD, Esq., F.S.A., and FRANK KING, Esq.	405-448
XX.— <i>Pleistocene Man in Jersey.</i> By R. R. MARETT, Esq., M.A., Reader in Social Anthropology, Oxford	449-480
XXI.— <i>Notes on an Anglo-Saxon Cemetery at Market Overton, Rutland.</i> By V. B. CROWTHER-BEYNON, Esq., M.A., F.S.A., Local Secretary. With a supplementary note by E. THURLOW LEEDS, Esq., B.A., F.S.A.	481-496
XXII.— <i>A Wardrobe Account of 16-17 Richard II, 1393-4.</i> By W. PALEY BAILDON, Esq., F.S.A.	497-514
XXIII.— <i>A Palaeolithic Industry at Northfleet, Kent.</i> By REGINALD A. SMITH, Esq., F.S.A.	515-532
XXIV.— <i>The Discovery of the Remains of King Henry VI in St. George's Chapel, Windsor Castle.</i> By W. H. ST. JOHN HOPE, Esq., M.A.	533-542
XXV.— <i>The Plan of the First Cathedral Church of Lincoln.</i> By JOHN BILSON, Esq., F.S.A.	543-564
XXVI.— <i>A Late-Celtic and Romano-British Cave-dwelling at Wookey-Hole, near Wells, Somerset.</i> By H. E. BALCH, Esq., and R. D. R. TROUP, Esq.	565-592
XXVII.— <i>Lake-dwellings in Holderness, Yorks., discovered by THOS. BOYNTON, Esq., F.S.A., 1880-1.</i> By REGINALD A. SMITH, Esq., F.S.A.	593-610
INDEX	611-629

LIST OF ILLUSTRATIONS

PLATE		PAGE
I.	Caerwent—Plan of Temple and Houses XVII N, XVIII N, XIX N, and XX N facing	1
	Fig. 1. The Temple, from the south-east	4
	Fig. 2. Bronze serpent-head ornament found in the Temple	5
	Fig. 3. Bird's head of carved bone found in the Temple	5
	Fig. 4. Plan and section of one of three bases from the first stage of the eastern portion of House no. XVIII N	8
	Fig. 5. Capital of column from eastern portion of House no. XVIII N	11
	Fig. 6. Wall between Houses nos. XIX and XX N showing sinkage over an ancient pit	12
	Fig. 7. Plan and section of small base from Pit C, north of House no. XVIII N	15
	Fig. 8. Sandstone figure of a seated goddess	16
	Fig. 9. Block-plan of Caerwent, showing the parts excavated down to the end of 1909	20
II.	Triptych of the twelfth century from the Abbey of Stavelot in Belgium facing	21
III.	Medallions on the sinister leaf of the Stavelot Triptych facing	22
IV.	Medallions on the dexter leaf of the Stavelot Triptych facing	22
V.	Byzantine Triptych with a relic of the True Cross, open facing	26
VI.	Byzantine Triptych with a relic of the True Cross, closed facing	28
VII.	Lesser Triptych, with relic of one of the nails, open and closed facing	30
VIII.	The Manor of Eia, or Eye next Westminster facing	31
	Fig. 1. Rough sketch of Neyte or Nete Manor House in 1614, from the Crace Collection	36
	Fig. 2. Rough sketch of Neyte or Nete House in 1675	37
	Fig. 3. South portion of the Manor, from a map of 1723	48
	Fig. 4. Ebury Farm, or Lordship House, 1675	50
IX.	Portraits of former directors of the Society of Antiquaries— Thomas Birch, F.R.S. ; Gregory Sharpe, F.R.S. facing	64
X.	Portraits of former directors of the Society of Antiquaries— Richard Gough, F.R.S. ; Samuel Lysons, F.R.S. facing	70
XI.	Portraits of former directors of the Society of Antiquaries— William Richard Hamilton, F.R.S. ; John Gage Rokewode, F.R.S. facing	72
XII.	Portraits of former directors of the Society of Antiquaries— Albert Way ; Admiral William Henry Smyth, F.R.S. facing	74
XIII.	Westminster Abbey—Plan showing relative positions of the Church of Edward the Confessor and of the existing church facing	94

LIST OF ILLUSTRATIONS

PLATE		PAGE
XIV.	Westminster Abbey—Plan of the Norman bases of the presbytery of Edward the Confessor's Church facing	94
XV.	Plan of the Abbey Church, &c., of Jumièges facing	96
	On the Use of the Deer-horn Pick, &c. :	
	Fig. 1. Deer-horn pick found at Silchester	101
	Fig. 2. Single-handed deer-horn pick	104
	Fig. 3. Double-handed deer-horn pick	104
	Fig. 4. Deer-horn rake	104
	Fig. 5. Deer-horn rake and lever combined	104
	Fig. 6. Deer-horn pick found with the skeleton of a miner at Obourg	105
	Fig. 7. Section of the eastern portion of the railway cutting at Spiennes, showing the position of the shafts and galleries	107
	Fig. 8. Section of a neolithic shaft	108
	Figs. 9–10. Neolithic flint-mines at Champignolles	109
	Fig. 11. <i>Unguentarium</i> representing the form of the section of a neolithic shaft	109
	Fig. 12. Flint picks from Spiennes	110
XVI.	Deer-horn picks from flint-mines facing	111
	Fig. 13. Ground plan of neolithic mines	111
XVII.	Neolithic mining implements facing	112
	Fig. 14. Flint-mining implements from Champignolles	113
	Fig. 15. Section of ancient mines at Spiennes	114
	Fig. 16. Deer-horn pick from Grimes Graves	117
	Fig. 17. Pottery showing fragments of calcite	118
XVIII.	Deer-horn tools from mines in Belgium, Spain, and Salzberg near Hallstatt facing	118
	Fig. 18. Copper or bronze axe from Milagro mine, Spain	120
	Fig. 19. Metal pick	121
	Fig. 20. Hafted metal pick	121
	Fig. 21. Fragments of torches found at Salzberg	121
	On the Early Use of Arabic Numerals in Europe :	
	Fig. 1. Date at Weissenburg	143
	Fig. 2. Date at Pforzheim	143
XIX.	German seals with dates in Arabic numerals facing	144
	Fig. 3. On a painting by Jean Fouquet	146
	Fig. 4. The date 1470 on a bronze statuette of Marcus Aurelius, Vienna Hofmuseum	148
	St. Paul's School before Colet :	
XX.	A. Grant by Richard de Belmeis, Bishop of London, <i>c.</i> 1111, to Canon Henry, of St. Paul's School, &c. B. Decree of Henry, Bishop of Winchester, <i>c.</i> 1140, to enforce the legal monopoly of St. Paul's School facing	212

LIST OF ILLUSTRATIONS

xi

PLATE		PAGE
	On a Bronze Age Cemetery, &c. :	
	Fig. 1. The dilapidated cist, showing the broken cover-stone and five of the seven urns found in it	240
	Fig. 2. Some of the urns after being restored	241
	Fig. 3. An urn with overhanging rim, showing the position in which it lay in the earth	242
	Fig. 4. Perforated stone hammer	245
	The Album Amicorum :	
XXI.	Thesaurus Amicorum, c. 1558 facing	254
XXII.	Engraved titles, &c., by Theodore and Johann Theodore de Bry . facing	256
XXIII.	Engravings by Theodore de Bry, 1593 facing	258
XXIV.	Signatures, 1570-1664 facing	260
XXV.	Album of Hieronymus Cöler, 1561-1575 facing	264
XXVI.	Album of Hieronymus Cöler, 1561-1575 facing	266
	Fig. 1. Album of Andreas Tucher	267
XXVII.	Album of Sebastian von Stamps, Vienna, 1571-1583 . . . facing	268
XXVIII.	Album of Sebastian von Stamps, Vienna, 1571-1583 . . . facing	270
XXIX.	Album of Johann von Thau, 1578-1598 facing	274
XXX.	Album of Johann von Thau, 1578-1598 facing	276
	Fig. 2. Album of Sebastian Zäh	277
	Fig. 3. Album of Paul Groe	286
	Fig. 4. Album of Paul Groe	287
	Figs. 5-7. Album of Charles de Bousy	291
XXXI.	Albums of Joh. Molitor, 1581-1591, and Joh. Wiliczky, 1608-1630 facing	292
XXXII.	Album of Prince Charles Louis, the Elector (?), 1622-1633 . facing	302
XXXIII.	Hampton Court—The stone bridge as exposed by excavation, 1909 facing	310
XXXIV.	Hampton Court—The west front after the excavation of the moat facing	311
XXXV.	Hampton Court—The west front c. 1731 facing	312
XXXVI.	Hampton Court—The stone bridge as restored, 1910 . . . facing	314
	Excavations at Silchester :	
	Fig. 1. Sections of banks and ditches at <i>Calleva</i>	318
	Fig. 2. Sections of the ditch outside the north gate of <i>Calleva</i> .	319
	Fig. 3. Sections of the ditch outside the west wall and west gate at <i>Calleva</i>	320
	Fig. 4. Sections of the ditch outside the south gate of <i>Calleva</i> .	322
	Fig. 5. Plans of potters' kilns found to the north-east of <i>Calleva</i> .	327
	Fig. 6. Potters' kilns found to the north-east of <i>Calleva</i> . . .	328
	Prehistoric Pits at Peterborough, &c. :	
	Fig. 1. Diagrammatic sections of pits, and pit no. 1, Peterborough .	334
	Fig. 2. Clay sling-bolt, Peterborough	335
	Fig. 3. Neolithic bowl, Peterborough	336
	Fig. 4. Patterns on drinking-cups, Peterborough	337

PLATE		PAGE
	Fig. 5. Fragments of drinking-cups, with sections, Peterborough .	338
	Fig. 6. Fragments of drinking-cups, with sections, Peterborough .	339
XXXVII.	Prehistoric pottery found in England facing	340
	Fig. 7. Neolithic fragments, with sections, West Kennet long barrow, Wilts.	343
XXXVIII.	Neolithic remains found in England facing	344
	Fig. 8. Fragment of large drinking-cup (?), Peterborough	345
	Fig. 9. Fragments with in-turned rim, Peterborough	345
	Fig. 10. Fragment with plain edge, Peterborough	345
	Fig. 11. Fragment with double groove, Peterborough	345
	Fig. 12. Pitted fragment, with section and lip ornament, Peterborough .	345
	Fig. 13. Pitted fragment, with section and interior design, Peterborough .	345
	Fig. 14. Vase, with section, Upper Swell long barrow, Glos.	347
XXXIX.	Evolution of food-vessels in Ireland facing	348
	Canterbury Cathedral Choir :	
XL.	'Thos. Johnson fecit. Canterbury Quire as in 1657. Ye prospecte from ye Clock House' facing	353
XLI.	A prospect of the Choir, c. 1716 facing	354
XLII.	View of the Nave, 1816, from sketch by H. S. Storer facing	357
XLIII.	Iron screen now in South-west Porch (phot. J. Charlton); iron screen now in West Entrance (phot. J. Charlton) facing	358
XLIV.	Oak framing now at Adisham facing	360
XLV.	View from Beckett's Crown, 1816, from sketch by H. S. Storer facing	362
XLVI.	Canterbury Choir, from a picture in possession of Canon Mason, probably painted between 1676 and 1682 facing	364
XLVII.	Peace's design for the organ front facing	366
	Exchequer Tallies :	
XLVIII.	Fig. 1. Modern private tallies. Fig. 2. Exchequer tallies, thirteenth century facing	368
XLIX.	Exchequer tallies, thirteenth century facing	374
L.	Fig. 1. Exchequer tally : stock and foil ; nineteenth century. Fig. 2. Exchequer tallies, thirteenth and nineteenth centuries facing	376
LI.	Fig. 1. Exchequer tallies, eighteenth century. Fig. 2. Exchequer tallies, thirteenth century, and private tallies, fourteenth century facing	378
	Italian Armour from Chalcis :	
LII.	Bascinet and salade in the Ethnological Museum, Athens facing	384
LIII.	Salades, armets, and jazeran coat in the Ethnological Museum, Athens facing	386
	Fig. 1. Brigandine at Vienna	388
LIV.	Brigandine plates in the Ethnological Museum, Athens facing	388
	Figs. 2-6. Armourers' marks	389

LIST OF ILLUSTRATIONS

xiii

PLATE		PAGE
	Figs. 7-10. Armourers' marks	390
LV.	Brassard, cuisse, &c., in the Ethnological Museum, Athens . facing	390
	Mediaeval personal ornaments from Chalcis:	
	Figs. 1-4. Finger-rings	393
LVI.	Mediaeval personal ornaments from Chalcis facing	394
	Figs. 5-7. Finger-rings, &c.	397
	Fig. 8. Ear-ring	397
	Figs. 9-10. Hooks, perhaps intended to support knives, daggers, or small articles	397
	Figs. 11-16. Various ornaments	397
	Fig. 17. Inscriptions on rings	400
LVII.	Caerwent—Plan of Houses VIII N, XXII N, XXIII N, XXIV N, XXV N facing	405
	Fig. 1. House no. VIII N. Cap of small column	406
	Fig. 2. House no. VIII N. Fragment of decorated stone slab	406
	Fig. 3. Column in angle of Room 11, House no. VIII N	408
	Fig. 4. House no. VIII N. Column in angle of Room 11	409
	Fig. 5. House no. VIII N: Chamfered base	410
	Fig. 6. House no. VIII N: Column base	410
LVIII.	Caerwent—Fig. 1. Cinerary urns found in 1909 and 1910. Fig. 2. Samian bowl. Pit, House no. XVIII s. Fig. 3. Samian bowl, Pit, Room 14, House no. VIII N facing	410
	Fig. 7. House no. XXIII N: Moulded slab	414
	Fig. 8. House no. XXIV N: Plan of threshold	415
LIX.	Caerwent—Fig. 1. Finial. From House no. XX s. Fig. 2. Altar. From House no. XVI s. Fig. 3. Altar. From Pit, House no. XXIV N facing	417
	Fig. 9. House no. XXV N: Column	418
LX.	Caerwent—Plan of Houses XIV s to XXIV s facing	420
LXI.	Caerwent—Fig. 1. Iron sheath for wooden spade. Fig. 2. Iron axe- heads. Fig. 3. Carpenter's iron plane. Fig. 4. Iron tools and key. Fig. 5. Iron spear-heads. Room 3, House no. XIV s facing	422
LXII.	Caerwent—Fig. 1. House no. XVI s, looking north. Fig. 2. Cellar, House no. XV s, looking south. Fig. 3. Cellar, House no. XV s, looking north facing	424
	Fig. 10. Caerwent architectural fragments, 1910	425
	Fig. 11. House no. XVI s: First Period	428
	Fig. 12. Large jar, House no. XVI s	428
	Fig. 13. House no. XVI s: Second Period	429
	Fig. 14. House no. XVI s: Third Period	429
	Fig. 15. Ornamental lead panel from Room 1, House no. XVIII s	435
	Fig. 16. House no. XVIII s: Carved slab	436

LIST OF ILLUSTRATIONS

PLATE		PAGE
	Fig. 17. Lead ring from Room 3, House no. XX s	438
	Fig. 18. Plan of earlier building, under House no. XIX s	440
	Fig. 19. House no. XXI s: Base with chamfered plinth	441
	Fig. 20. Sinkage of street paving, arch and west wall of House no. XXIII s	442
	Fig. 21. Suggested restoration of finial	443
	Fig. 22. Stone coffin with skeleton found in Vicarage orchard	444
LXIII.	Caerwent—Plan of building in the Vicarage orchard facing	444
LXIV.	Caerwent—Plan showing the whole of the excavations to the end of the year 1910 facing	446
	Pleistocene Man in Jersey :	
LXV.	1. La Cotte de St. Brelade, before excavation (phot. G. Piquet); 2. La Cotte de St. Brelade, after excavation, 1910 (phot. E. Guiton); 3. La Cotte de St. Ouen, from the sea (phot. E. Guiton); 4. St. Ouen's Bay, submerged forest, as uncovered September, 1902 (phot. J. Sinel); 5. South Hill, high-level raised beach (phot. E. Guiton); 6. Le Cané de la Rivière, mid-level raised beach above raised sea-cave (phot. E. Guiton) facing	449
	Map of Jersey	450
	Jersey elevated 60 feet, at low tide	454
LXVI.	1, 2. Implements from La Cotte de St. Brelade (phot. H. Balfour) facing	459
LXVII.	1, 2. Implements from La Cotte de St. Brelade (phot. E. Guiton) facing	460
	La Cotte de St. Ouen, Jersey: Vertical section	463
	La Cotte de St. Ouen, Jersey: Horizontal section	463
	La Cotte de St. Ouen, Jersey: Section of floor	464
LXVIII.	1 (phot. H. Balfour), 2 (phot. J. Sinel): Implements from La Cotte de St. Ouen facing	466
LXIX.	1. Sporadic implements, possibly pleistocene, from Jersey (phot. J. Sinel); 2. Heart-shaped <i>coup-de-poing</i> from La Cotte de St. Ouen (phot. G. E. Lee); 3. Obverse of same (phot. G. E. Lee) facing	468
LXX.	1. Skull from the loess-bed at Green Island: lateral view (phot. J. Sinel); 2. Vertical view of same (phot. J. Sinel); 3. Teeth of <i>Homo</i> <i>Breladensis</i> (phot. F. H. S. Knowles) facing	472
	Synthetic section, Tunnel Street, St. Helier, Jersey	473
	Changes in the elevation of Jersey, as shown by the changes in mean sea-level	479
	On an Anglo-Saxon Cemetery at Market Overton, Rutland :	
	Fig. 1. Jewellery from Market Overton	482
	Fig. 2. Clasps of silver wire, Market Overton	483
LXXI.	1-3. Square-headed brooches, Market Overton; 4-6. Cruciform brooches, Market Overton facing	485
	Fig. 3. Gold bracteate, Market Overton	488

LIST OF ILLUSTRATIONS

XV

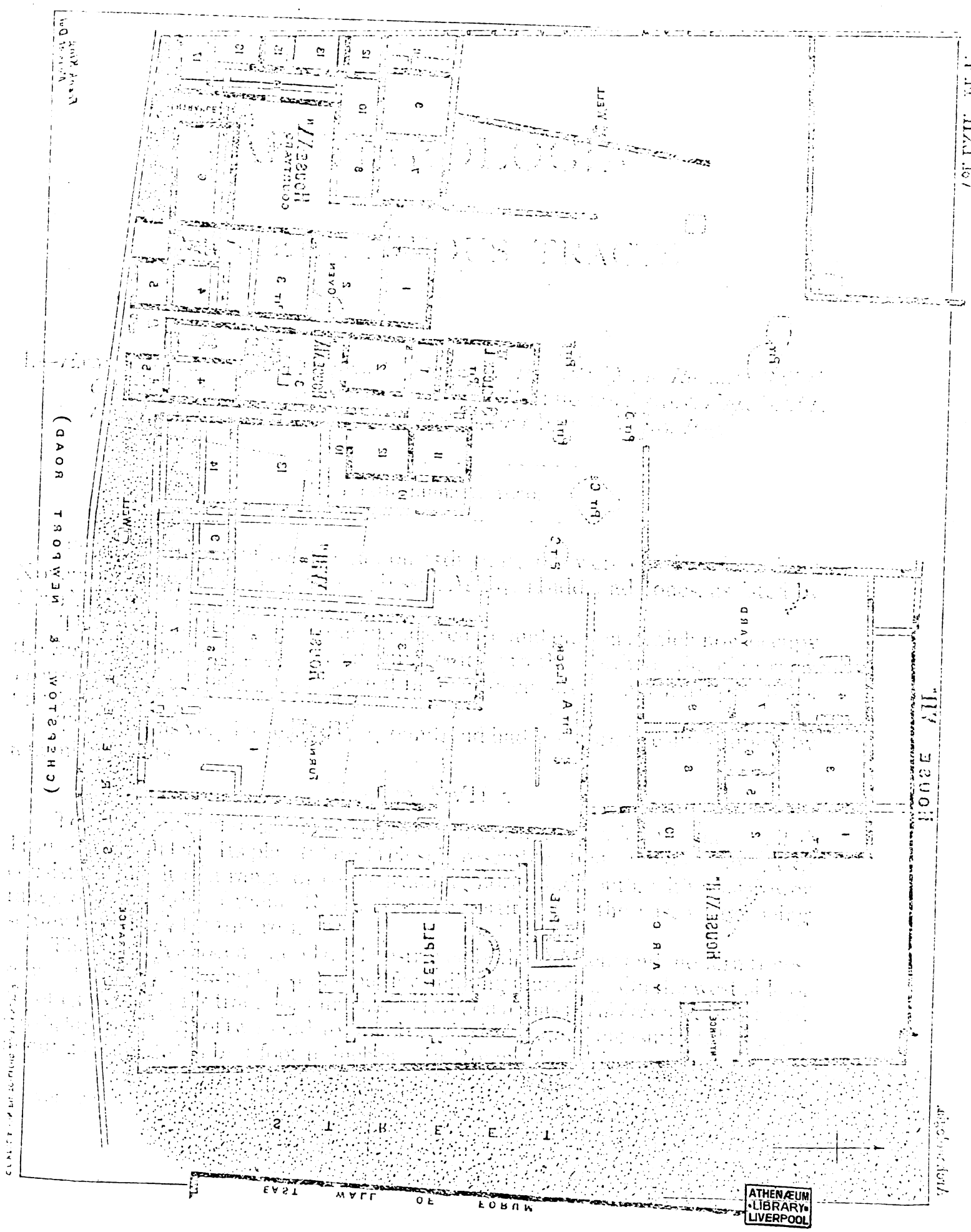
PLATE		PAGE
	Fig. 4. Gold bead, Market Overton	488
	Fig. 5. Gold ring, Market Overton	488
	Fig. 6. Bracteate from St. Giles' Field, Oxford	491
	Fig. 7. Bracteates from Denmark and Skåne, illustrating the 'Danish' division	492
	Fig. 8. Bracteate from Skåne, belonging to 'Danish-derivative' class	492
	Fig. 9. Bracteate from Denmark of intermediate type	492
	Fig. 10. Detail of design on semicircular head-plate of silver brooch from Market Overton	494
	Fig. 11. Design on foot of silver brooch from Market Overton (restored)	494
	A Palaeolithic Industry at Northfleet:	
LXXII.	Derived palaeolithic implements, Northfleet Pit . . . facing	521
	Fig. 1. Tortoise-shaped core, Northfleet; top and end views	522
	Fig. 2. Flake thickened at the point, Northfleet	523
LXXIII.	Northfleet and Le Moustier implements compared . . . facing	524
	Fig. 3. Side chopper, Northfleet; with section	526
LXXIV.	Typical flints from the workshop, Northfleet Pit . . . facing	529
	Remains of King Henry VI:	
	Diagram showing relative position of lead chest and wooden coffin in King Henry VI's grave	534
LXXV.	Lincoln Cathedral—Plan showing the remains of the first church (eastern part) facing	550
LXXVI.	Lincoln Cathedral—Plan showing the remains of the first church (western part) facing	552
LXXVII.	Plan of Lincoln Cathedral by E. J. Willson, F.S.A.; to which is added in red a plan of the first church as developed from the existing remains shown on plates LXXV and LXXVI, by John Bilson, F.S.A. facing	562
	Cave-dwelling at Wookey-Hole, Somerset:	
	Fig. 1. Wookey-Hole Cavern, plan and section, 1910	566
	Fig. 2. Section across Celtic and Romano-British deposit at 30 ft. from entrance	569
	Fig. 3. Section across excavation at 60 ft. from entrance	571
	Fig. 4. Section across excavation 75 ft. from entrance	572
	Fig. 5. Iron currency-bar, Wookey-Hole	574
LXXVIII.	Bone and iron objects from Wookey-Hole facing	576
	Fig. 6. Iron penannular brooch	577
	Fig. 7. Bronze brooch	578
	Fig. 8. Roman bronze brooch	578
LXXIX.	Bone pins, spindle-whorls, and hoof-plate, Wookey-Hole . . . facing	579
	Fig. 9. Bronze pin	579
	Fig. 10. Ornamented bone of unknown use	582

LIST OF ILLUSTRATIONS

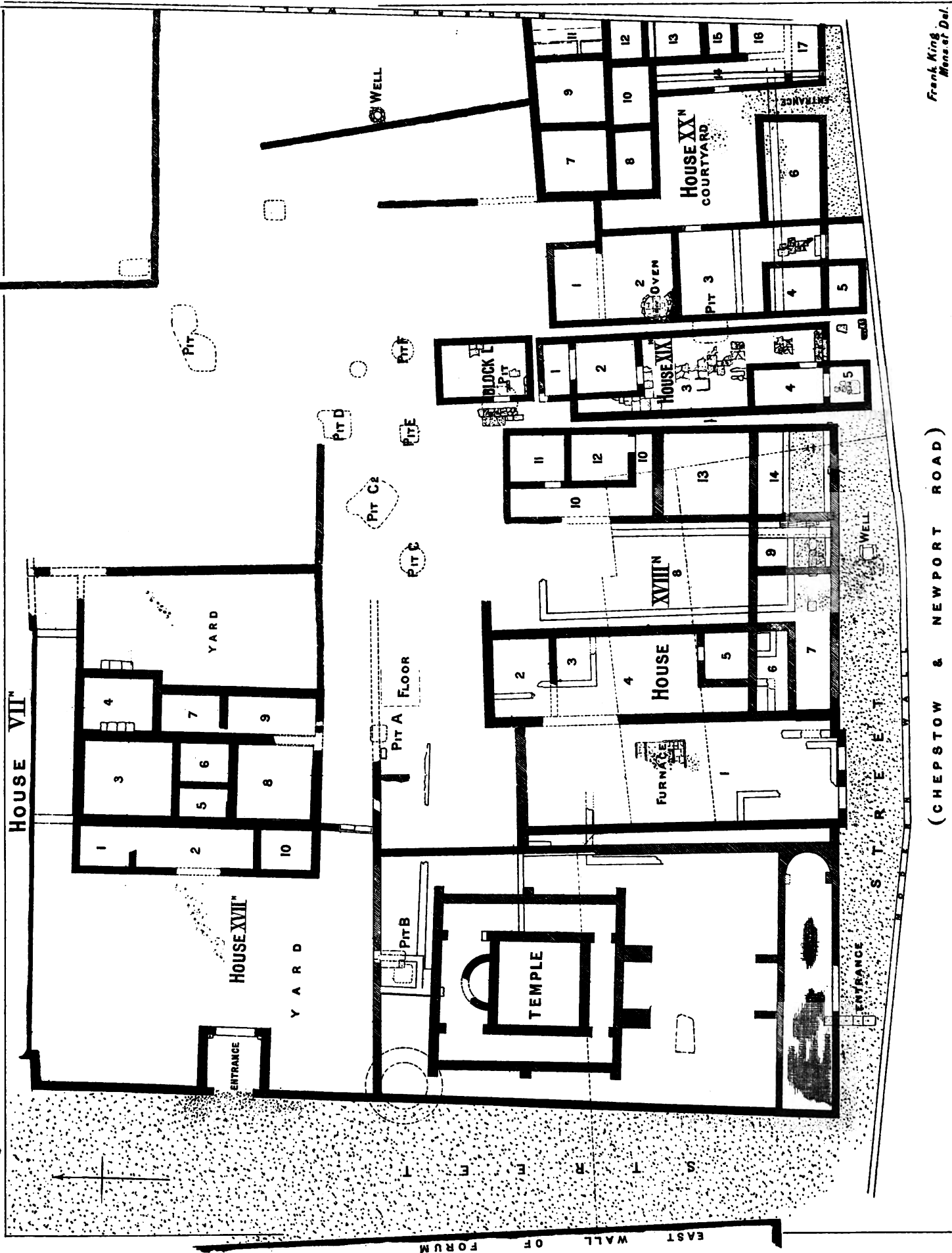
PLATE		PAGE
	Fig. 11. Pottery from Wookey-Hole	586
	Fig. 12. Pottery from Wookey-Hole	587
	Fig. 13. Pottery fragments from Wookey-Hole	588
	Lake-dwellings in Holderness, Yorks. :	
	Fig. 1. Ulrome Lake-dwelling. Plan of West Furze	594
	Fig. 2. Ulrome Lake-dwelling. Section A-C	595
	Fig. 3. Ulrome Lake-dwelling. Section B-J	596
	Fig. 4. Ulrome Lake-dwelling. Section F-D	597
	Fig. 5. Ulrome Lake-dwelling. Section G-I	597
LXXX.	West Furze Pile-dwelling partly excavated, from the north-east facing	598
	Fig. 6. Bone adze-heads, West Furze Lake-dwelling	599
	Fig. 7. Urn of plain brown ware, West Furze Lake-dwelling	600
	Fig. 8. Pile pointed by means of a bronze tool: Ulrome Lake-dwelling	601
	Fig. 9. Bronze spear-head, with wooden peg, West Furze Lake-dwelling	603
	Fig. 10. Pottery urn from pit, West Furze	604
	Fig. 11. Ulrome Lake-dwelling. Section of Round Hill	605
	Fig. 12. Jet armlet, Round Hill Lake-dwelling	606
LXXXI.	Sketch-map showing position of Lake-dwellings in Holderness facing	607

COVERMENT. PLAN OF TEMPLE AND HOUSES XVIII XIX AND XX

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ARCHAEOLOGIA

OR

MISCELLANEOUS TRACTS

ETC.

I.—*Excavations at Caerwent, Monmouthshire, on the Site of the Romano-British City of Venta Silurum, in the year 1908.* By THOMAS ASHBY, Esq., D.Litt., F.S.A., ALFRED E. HUDD, Esq., F.S.A., and FRANK KING, Esq.

Read 14th January, 1909.

THE excavations of 1908 began on 15th June, and were continued until 6th November, under the direction of Messrs. Ashby, Hudd, and Jones, assisted by Mr. F. King as architect.

They were entirely carried out in the orchard and gardens which now occupy the *insula* to the east of the forum, immediately to the north of the high road. House no. VII N, which was excavated in 1906,¹ occupies the northern portion of this *insula*.

The site was very largely made ground, and had been previously occupied by a number of pits.

HOUSE no. XVII N.

To the south of House no. VII N lies a small house, which we have called House no. XVII N. Its plan (plate I) closely resembles that of House no. III N,² consisting like it of a range of rooms running north and south, with a narrower range on each side of them; Room 4, at the north end of the east range, being somewhat wider than the rest.

The house had been a good deal destroyed both in ancient and modern times, some of the walls having been dug out for building material. On the west side of Room 3 were strong traces of burning. Here, on a mass of *débris* and blackened earth, lay fragments of two sandstone slabs, 1 $\frac{5}{8}$ inch thick, and measuring altogether about 2 feet 6 inches by 1 foot 10 inches. In Room 4 lay a similar fragment, also

¹ See *Archaeologia*, lx. 451.

² *Archaeologia*, lix. pl. xi.

2 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

on *débris*, and of about the same size as the other two together. The floors have in some places disappeared.

Room 3 has its walls preserved on all four sides above the level of the concrete floor, and of the slabs in Room 4 and to the east of it. It is not certain where the entrance was, whether it was by steps, or in the south-west corner of the room, from Room 5.

In the south-west angle of Room 2 a small portion of white plaster was still *in situ* on the wall, and in working along the wall between Rooms 1 and 3 a considerable amount of ordinary black pottery was found. Along the wall between Rooms 3 and 4 a weaver's bone comb was discovered, and adjoining the west wall of Room 4 were fixed four sandstone slabs each about 7 inches thick and 2 feet 1 inch square. A similar line of slabs was found outside the east wall of this room (see plan, plate I). In both cases, no doubt, the slabs were used as steps forming the entrance to Room 4 from the east and from Room 4 into Room 3; only in the latter case there must have been another step up, as the west wall of Room 4 was preserved to a height of 1 foot above the slabs.

Near the east wall of Room 4 a piece of the bottom of a Samian bowl with a circular floral stamp was found, and with it coins of Constantine. I and Valens. This only goes to show, what has already been noticed at Caerwent, that owing to the site having been continually inhabited, and ransacked for building material, the chronological order of the strata has been much disturbed, and that the chronology is only certain where pottery is found under floors. This was also the case in Room 8, where 2 feet down a coin of Claudius Gothicus was found, with a piece of second-century Samian. Coins are apt to work their way downwards, worms assisting their progress. At 2 feet 6 inches below grass level on the north side of Room 8, and 3 feet below on the south side, was a concrete floor with fragments of plaster in it, and a burnt layer on top. Below this floor, and 4 feet below grass level, a piece of second-century Samian was found.

The small rooms 5 and 6 occupy the middle of the house.

On the west side of Room 5 there was plain white plaster *in situ* to a height of 2 feet above the floor level. The plaster was $1\frac{1}{2}$ inch thick, and finished with a quarter-round moulding as skirting on the floor. The floor was of concrete, rather perished, and some 4 to 6 inches below the threshold stone of the room. A small brass of Trebonianus Gallus (A.D. 251-254) was found on this floor. Between Rooms 5 and 6 the wall is broken away for about 3 feet, and there may have been a doorway here. These two rooms were accessible from one another, and Room 5 could be entered from Room 3, but neither had any well-defined entrance southward into Room 8. There was no access westward into Room 2; indeed, the western range of rooms, nos. 1, 2, and 10, seems to have been shut off from the rest of the house.

Room 2 was entered directly from the yard, and Rooms 1 and 10 from Room 2. Room 7 was probably entered from Room 4, and Room 9 from Room 7. Whether Rooms 7 and 9 had any entrance from the east, and whether Room 9 led into Room 8, must be treated as doubtful.

In Room 9 a fragment of a Kimmeridge shale disk and some brightly coloured (pink, green, and yellow) plaster were found.

To the east of the house is a yard with rough pitching about 1 foot 6 inches below grass level. The yard is surrounded by walls on all sides, and was probably entered from the east. Its north wall has two cross walls connecting it with House no. VII N. The foundation of another wall was found running north from the north-west angle of Room 3. There is also a yard on the west of the house, roughly pitched, and bounded on the west by the wall which follows the eastern edge of the street.

The northern portion of the wall is shown in the plan of House no. VII N, already published in *Archaeologia*,¹ and there wrongly attributed to the latest period of the house. As a matter of fact it has been since ascertained that the portion running eastward (and therefore the whole wall) is earlier, and not later, than the south wall of Room 20 of House no. VII N. This portion of the wall originally ran right up to the south-west angle of the earliest building of House no. VII N and was broken away when it was extended westwards. This explains the facts (1) that it forms a right angle with the west wall of the first date of this house, and (2) that instead of joining House no. VII N at the south-west angle of the building of the third date it runs on a little further east and is then broken away.

The yard west of House no. XVII N is entered from the street by a gateway 9 feet 3 inches wide; this leads into a space 12 feet 6 inches square with another gateway on the east. The socket hole for one of the gates is still preserved in the stone on the north side of the east gateway.

No doubt here, as probably at the entrance to the forum, there was a porch. Red and yellow plaster fragments were found here.

On the south the yard is closed by the boundary wall of the temple (see below), and on the east by House no. XVII N itself. The space between House no. XVII N and the temple boundary wall prolonged eastward is closed, opposite the south-west angle of Room 8, by a short piece of wall and a doorway. The threshold stones of the door are still preserved *in situ*. It is, however, doubtful if one of these blocks originally served as a threshold stone; the groove in it may have supported another block placed endwise.

¹ Vol. lx. plate xlii.

4 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

THE TEMPLE

The building to the south of House no. XVII N, occupying the ground between the latter and the high road, was next excavated, and proved to be one of the most important and interesting structures yet found at Caerwent. There can be no doubt that it is the remains of a Roman temple, and although the building has been destroyed nearly throughout to below floor level, and has been used as a stone quarry by the builders of the houses and garden walls in the neighbourhood, enough remains to enable the ground-plan to be restored fairly completely.



Fig. 1. The Temple, from the south-east.

It greatly resembles the temple found in the beginning of the last century by the Hon. and Rev. W. H. Bathurst, and all too briefly described by him in his *Roman Antiquities of Lydney Park, Gloucestershire*.¹ The ground-plan of this Lydney temple, as given by Mr. Bathurst (plate iv c), is very like ours at Caerwent, but the latter is much smaller. The Lydney building measured about 93 feet by 73 feet, and the *cella* about 60 feet by 30 feet.

The Caerwent temple consists of a rectangular *cella*, 20 feet by 19 feet 6 inches, with an apse in the middle of the north side (fig. 1). There are pilasters at the north and south ends of the east and west walls, which balance the pilasters

¹ London, 1879.

in the surrounding wall of the *podium*. This wall has buttresses at the ends of the north and south sides and in the middle of the east and west sides, and is sufficiently far away from the walls of the *cella* to leave plenty of space for an ambulatory completely round it (see plan, plate I). Running south from the south side of the *podium* are two short walls symmetrically placed, and forming the sides of the entrance to the temple across an open space¹ from a room with a tessellated floor which occupies the whole of the south front of the temple area.

This is bounded on the south by the high road; on the west by the road running north and south to the east of the forum; on the north by the yard of House no. XVII N, and on the east by the building we have called House no. XVIII N. The enclosed temple area measures 110 feet from north to south, and 63 feet from east to west.

All the walls of the temple are massive and well built.

The *cella* and its *podium* occupy the northern portion of the temple area, but are not placed quite symmetrically in it, the outside boundary walls not running parallel with the walls of the *podium* (see plan). This is probably due to the fact that the former in part belong to an earlier period (see below).

Careful examination of the interiors of the *cella* and the *podium* has not yielded much except miscellaneous *débris*, as though they had been purposely filled up to form a floor level which has almost entirely disappeared, except on the south side of the *podium*. The natural bottom was reached 5 feet below the grass level, and the walls ran down to this depth to ensure proper stability. A few

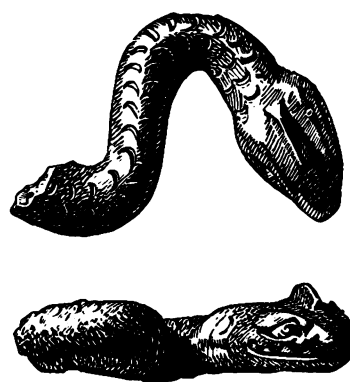


Fig. 2. Bronze serpent-head ornament found in the Temple. $\frac{1}{2}$.

old red sandstone *tesserae* were found in the *cella* and its apse, close to the surface of the ground, and lower down in the apse a few pieces of window glass and of coloured plaster, red, white, and yellow. At 5 feet down a coin of Victorinus and one of Gallienus were found; also a silver one of Alexander Severus.

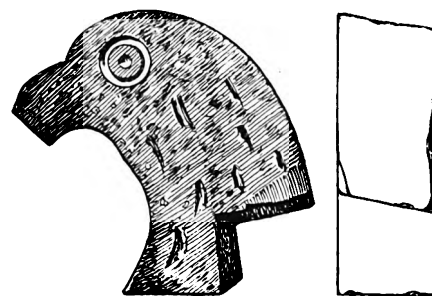


Fig. 3. Bird's head of carved bone found in the Temple. $\frac{1}{2}$.

To the east of the *cella* a small bronze serpent-head ornament, about $2\frac{1}{2}$ inches long (fig. 2), was found 3 feet below grass level; also buried in front of the apse a dog's skull, and a bird's head in carved and polished bone (fig. 3).²

¹ A later pit, roughly rectangular, and 6 feet in depth, has been formed in mediaeval or modern times on the west side of this space.

² These relics are not conclusive, but like the Lydney temple this one may have been dedicated

6 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

In the space between the south wall of the *cella* and the south wall of the *podium*, and in a line with the entrance, a cement flooring resting on a concrete foundation was found on a level with the tessellated floor of the entrance hall (see below). This is the only part of the pavement of the *podium* which is preserved.

The long room which occupies the south front of the temple area has an apse at its east end, and is paved with old red sandstone *tesserae*, roughly laid. Only one side of the entrance from the street to this room was preserved, and three large blocks of sandstone were still *in situ* outside at the road level, and one inside on a level with the floor. These no doubt formed part of an architectural feature at the doorway of this important building.

There are a few traces of earlier walls within the area of the temple, which are perhaps contemporary with the external boundary walls of the temple area on the north and west. These walls are very low down, only one or two courses being preserved, and surrounded a pit which we have called Pit B.

Over the east wall and partly over the pit there was found a hearth made of sandstone blocks. Below this hearth, 4 feet down, was found some Samian pottery, one a straight-sided bowl (Dragendorff 30),¹ and pottery was found almost all the way down. The bottom of the pit was reached 13 feet below grass level, and 9 feet 6 inches from the top of the walls surrounding the pit. To the west of the pit was pitching at a very low level round the foundations, and between the wall bounding the pit on the south and the north wall of the *podium* was a mass of masonry, filling up the space between the walls. Both these features are probably to be attributed to the instability of the ground, and may be considered as precautionary measures.

Running east from near the middle of the east wall of the *cella* is another early foundation which runs under the east wall of the *podium* and the east boundary wall into the line of the north wall of Room 1 of House no. XVIII n. It looks as if the east boundary wall for some distance southwards from this point is built on a wider and earlier foundation. It also appears that the whole of the temple, as it at present stands, is of a later date than these early walls running east under

to a health deity, possibly Aesculapius, or Hygeia. The serpent's head is too heavy to have formed part of a bracelet or brooch, and it has been suggested that it may have been part of a statuette of Hygeia, who was sometimes represented with a serpent twined around her body. A stone effigy of the Romano British period, with remains of a serpent coiled round the bust, was found some years ago a few miles east of Caerwent, but has not yet been described or illustrated. The Caerwent serpent differs from any other known to me from Roman times in having a distinct triangular crest on the top of its head. [A. E. H.]

¹ The elements of decoration are as follows: In the first vertical division Déchelette 34 (seahorse to right), under it a garland; under this D. 969 (quadruped, hare?, to left). In the second vertical division a medallion with a scene; under it D. 1035, 1009 (bird to left and bird to right). The pattern is then repeated: the seahorse apparently recurs (to left) and under it is D. 927 (dog to right).

its eastern boundary wall. The fragments of walls between the temple and House no. XVIII N may belong to this early building, or to another house of the same date.

There were remains of some later constructions belonging to post-Roman times at the north-west angle of the temple area. Here over the north-west corner and partly over the Roman street was found a circular building 11 feet in diameter, with walls 3 feet 6 inches thick. A portion of the slab floor was still *in situ*, well above the level of the Roman street. On pulling down the portion of the circular wall over the north-west angle of the *podium* the buttress was discovered, and several of the sandstone blocks which had formed part of the buttress had been used to build the wall of the circular building. On clearing out the chamber a few bones of pig, fish, and chicken were found. The structure is no doubt post-Roman, and may have been the foundation for a circular stone culverhouse similar to several of mediaeval date which still remain in the West of England and South Wales; or it may have been a pigeon-house belonging to Caerwent House, which was, a century since, the Caerwent Inn, a posting-house on the London road where several coaches stopped each day on their way through.

Just south of this round building a considerable quantity of dark red quarter-round skirting and other coloured plaster was found, 3 feet below grass level. It is uncertain to which of the walls this plaster belonged. Just here the west wall of the *podium* has been reconstructed in quite modern times, and the apse had been partly destroyed by the insertion of a modern saw-pit. We have removed the pit and roughly repaired the apse, it having been decided by Viscount Tredegar to leave the whole of this interesting building permanently open.

The street west of House no. XVII N and the temple area increases considerably in width as it goes northward; it is 24 feet 6 inches in width where it joins the main east and west road, and 36 feet 2 inches wide opposite the entrance into House no. XVII N.

HOUSE no. XVIII N

House no. XVIII N occupies the site just east of the temple area. Originally it seems to have consisted of three distinct buildings, probably shops, having a frontage line on the street, as shown by the early walls running through Rooms 7, 9, and 14 on the plan, and contemporary with the line of large flat kerbstones and street layer found in those rooms.

Whether at this stage any building adjoined the temple area it is difficult to say, but there are traces of an ancient building as shown by the early walls just inside the entrance from the street, and also by the foundations of walls passing under the east wall of the temple area. The second stage of the buildings on this site seems to have been where the middle and eastern blocks were extended

8 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

over the footpath and street. This extension is shown by the early walls under the later front wall and over the slab kerbing and bases, which will be described later. The last stage was when the several buildings were combined into one large house, and the long wall bordering the street with another to the north, which formed the north side of Rooms 6, 9, and 14, were built.

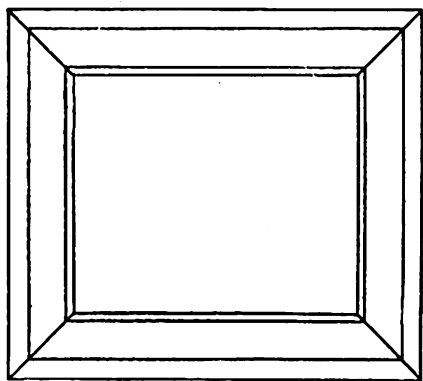


Fig. 4. Plan ($\frac{1}{2}$) and section ($\frac{1}{2}$) of one of three bases from the first stage of the eastern portion of House no. XVIII N.

We will begin with the first stage, of which not much remains. The flat kerbstones in Rooms 7 and 9 are very similar to those found on the village green in 1903.¹ The drain running north at the east end of these slabs is curious. Originally it must have served the purpose of draining the narrow space between Rooms 8 and 13, *i.e.* the space between the two buildings which would have had a considerable amount of rain water falling into it.

The early wall through Room 14, forming the south-eastern angle of the block, has a curious rebate at its western end, as if it had been intended to receive the wooden frame for a shop front.

Under the south-eastern and south-western angles of this room, and in the middle of the south wall, were found three large sandstone bases 1 foot 6 inches high and 1 foot 3 inches by 1 foot 6 inches on the top (Fig. 4); the eastern one is under the south-east corner of Room 14 and cannot be shown. These bases stood on other rough sandstone blocks, which in turn were on a rough stone foundation.

The middle base was best preserved and has been removed to the Museum, but it was found impossible to get out the lower blocks owing to their being so soft from damp and age. These bases can only have carried a porch or awning in front of the shop; there was plenty of room for foot passengers to pass between them and the shop front.²

The remains of the second stage of House no. XVIII N are more scanty than those of the first stage. All that we can identify with certainty are the walls in outline under the front wall and the wide wall running north and south in Room 9.

¹ *Archaeologia*, lix. 117 and pl. xi.

² On the wall south of the eastern courtyard of the house was found a gold coin of Elagabalus Cohen, 2nd Ed. no. 194) in good condition. This is the first gold coin we have found at Caerwent.

The whole of this building had been much destroyed owing to the erection of a malt-house on the site, all the stone required to build the malt-house being taken from the Roman walls underneath. The northern portion of the building suffered most in this respect.

The space numbered 1 simply consists of the entrance, which had a double doorway projecting 1 foot 6 inches in front of the general line of frontage to the street, the doors being 5 feet 6 inches wide. Just inside these doors was found a layer of rough stones very firmly packed and supporting a concrete floor on a level with the street surface. On the east side, 3 feet down, was found a fragment of figured Samian pottery (Dragendorff 37) with reversed stamp *WANNIO* (*Cinnami*).

In the middle of this large space and inside the malt-house were two curiously shaped furnaces, consisting of two parallel rows of sandstone slabs, placed on end and paved with similar slabs, the whole showing considerable traces of burning.

To the south-west of these furnaces was a hard-rammed gravel floor. In the north-west angle of this area (Room 1) was a pit or rubbish-hole, 7 feet deep, containing only broken pottery.

Further to the south the west face of the west wall of this room was composed of long ashlar blocks in the lower part and of smaller stones in the upper part, and between the two was a continuous groove 6 inches high and 3 inches deep, the purpose of which is uncertain. On the east side there was no such difference in the face, which was uniform throughout.

Room 2 had a concrete floor about 6 inches thick and 1 foot 6 inches below the grass level, upon which was a coin of Antoninus Pius. About 8 inches below the floor is a layer of rough stones and a bedding of mortar. Below this concrete floor two earlier walls of different periods were found, running north and south in the western portion of the room. There do not seem to be any traces of a floor in connexion with either of them, and they may have been simply boundary walls to a pit to the east.

Under the concrete floor to the west of the uppermost, *i.e.* the westernmost, of these cross walls was found the blade of an iron billhook with traces of the wooden shaft in the socket; also on both sides of the cross wall some pieces of Samian (Dragendorff 37) and a piece of a bowl like Dragendorff 32, but with the lip less pronounced (a common type here). Fragments from one side of this earlier wall fitted one from the other side. Further to the east the floor had given considerably, the room having apparently been built over the site of a pit. A large quantity of pottery, including a comparatively small amount of figured Samian ware, was found in this pit. About 4 feet down, just under the large stones serving as a foundation to the floor, which had sunk here, two black pear-shaped pots of

Upchurch ware, with scored intersecting lines forming lattice patterns (one of the commonest forms at Caerwent), were found, one broken lying sideways, the other entire standing straight up. At 6 feet down was found a coin of Constantine Junior, in fairly good condition, and near it, besides some Samian ware, including one small piece of Dragendorff 29, and several of Dragendorff 37, was a piece of a thin green glazed bowl with finely ribbed sides. At 8 feet 6 inches below the grass level the dish-shaped bottom was reached, formed of hard red clay.

To the south of Room 2 was a passage on the west, with no floor preserved, and on the east the small square room 3, with a concrete floor 3 feet below grass level. To the south of it again was Room 4, also with a concrete floor at the same level, with considerable traces of burning upon it. This room extended right across the malt-house, and is bounded on the south by the small room 5, with another short passage as on the north. Within the area of the malt-house some fine figured Samian was found, from 1 foot to 2 feet 6 inches below the modern level, close to the foundations of the wall.

Room 5 was approached by a doorway from Room 4, but no trace could be found of any doorway into Room 6, or from Room 6 into Room 7.

Between the early and later walls in Room 6, on the east side of the room, was found the upper portion of a large amphora upside down and broken into a great number of pieces, and a little lower down a fine bronze brooch.

The space, Room 8 on plan, most probably served as a courtyard in the last stage of the building. In the north-west angle were found, at 2 feet 6 inches down, fragments of black pear-shaped pots (two whole, or nearly so), and 3 feet 6 inches down a perfect black pear-shaped pot lying on its side at the level of the foundation of the wall.

No trace of doorways could be found in Rooms 9, 13, or 14.

The northern angle is broken away by a later wall crossing it at an angle, and by a modern slab-covered drain from the malt-house pit.

The east wing of the building was much better preserved. In the northern portion there was a corridor, 10 on plan, which turned east at its southern end. From the corridor Rooms 11 and 12 were entered, Room 11 on the west side and Room 12 on the south. Both these rooms had good concrete floors. On the threshold of Room 12 were found five coins and a piece of a figured Samian bowl (Dragendorff 37) with a tree upon it not corresponding with any of those figured by Déchelette. Of the coins two were much worn and burnt first brasses (possibly Vespasian and Hadrian), one a second brass (illegible), a silver denarius of Vespasian and one of Hadrian.

Under the concrete floor of the corridor south of Room 12 were found a mussel shell, a piece of Samian cup with ivy leaves on the edge (Dragendorff 35),

EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE II

and a piece of a figured bowl (Dragendorff 37) with medallion and the figure of a cock (Déchelette 1009). The west wall of the corridor 10 had nearly all been destroyed.

Very few finds were made in the southern portion of this wing. Over the two walls west of Room 13, the half of a very large lower stone of a quern was found. The stone was conglomerate, and measured 2 feet 5 inches in diameter. In the room, and against the west wall, was a perfect lower quern stone and a quantity of fragments of bright yellow plaster on a level with the early foundation. Between the west wall of Room 13 and the early east wall of Room 8 a large quantity of broken pottery and a few bone pins were found. Just south of the north wall of Room 14 the cap of a small column came to light (fig. 5).



Fig. 5. Capital of column from eastern portion of House no. XVIII N. $\frac{1}{4}$.

HOUSE NO. XIX N

In the narrow space of ground between House no. XVIII N and House no. XIX N a considerable amount of pottery was found at various depths, from 1 foot below grass to 5 feet down. The same remark applies to the space between House no. XIX N and House no. XX N. The pottery lay between the foundations, and was probably part of the rubbish thrown in to cover them. At 4 feet below grass two slabs of old red sandstone on edge were found.

House no. XIX N consists of a long range of five rooms, having a frontage of 21 feet 6 inches to the street.

Rooms 1 and 2 do not occupy the full width of the building, and appear to be of later formation, Room 1 being added to, and Room 2 cut out of Room 3. The

walls of Room 1 are not bonded into the main house wall, and the west and south walls of Room 2 are not bonded into the outside walls.

In the north-east corner of Room 1 two perfect pots were found, standing in the corner and covered with a sandstone slab; one was a small reddish-yellow bottle $4\frac{1}{2}$ inches high, the other a larger black pear-shaped pot $7\frac{1}{4}$ inches high,



Fig. 6. Wall between Houses nos. XIX and XX n showing sinkage over an ancient pit.

with scored lattice pattern of Upchurch ware. The top of the black pot was level with the floor. A doorway, well marked on the east side, leads from Room 1 into Room 2.

In Room 2 six coins of Victorinus, Constantine, Valens, and Gratian were found together on the floor level, which is shown by the doorway into Room 3 and the slab paving of the latter. Here also was found a piece of bright blue frit for use on enamelled metal work.

¹ Similar frit has been found at Caerwent previously, which seems to indicate that the beautiful enamelled objects found on the site were probably made there.

The narrow space between Room 2 and the west wall of the house was paved with large slabs of old red sandstone, $1\frac{1}{2}$ inch thick, and 3 feet below grass level. This space or passage formed a part of Room 3 before Room 2 was cut out. Probably the whole floor of the house, except Room 4, from the street to the north wall between Rooms 1 and 2, was originally a paved courtyard, Room 5 being built over the street later.

In the middle of Room 3 was a fireplace formed of slabs set up on end, and against the south wall was another furnace of larger blocks, all much burnt.

In the east wall of the room were considerable signs of subsidence (Fig. 6), clearly showing that the wall had been built over a pit and that a considerable part of the building stands on made ground. The bottom of the pit was reached on each side of the wall, 9 feet down.

About one thousand small coins were found in Room 3; they extended all over its area, but were especially numerous in the north-east part of the room near the wall. Some iron objects were also found. This small hoard consists almost entirely of minims, chiefly of Valentinian II., Theodosius and his two sons, those of Arcadius being, as usual at Caerwent, much more numerous than those of Honorius. There were also a few of Gallienus, Tetricus, Constantine I. and his family, Maximus, Victor, and one of Eugenius, mostly showing considerable wear. We may therefore date the deposit of the hoard to the first half of the fifth century A.D. Some of the coins and the whole of the room showed considerable traces of burning.

Room 4 was reached from Room 3 near the main entrance from the street. On the west wall of Room 4 some pinkish-brown plaster still remained.

Room 5 was reached from Room 4, and was paved with large sandstone blocks, about 2 feet 6 inches below grass level. A foot below these blocks was a rubble and concrete floor, probably the street, over which it was extended, and the bottom was reached 3 feet 6 inches lower. Room 5 was added later, as the straight joint at its north-west and north-east corners shows.

The main entrance to the house from the street was through a small space paved with slabs and a large doorway 5 feet wide into Room 3. The threshold stone was a 6-inch step above the slab paving of the room.

BLOCK L N.

This is an oblong building consisting of a single room to the north of House no. XIX N and separated from it by a narrow space only 1 foot in width, but it does not appear to have ever formed part of the house.

The room was paved with old red sandstone flags and has a yellow sandstone threshold *in situ* on the west side, opening upon an area also paved with old red sandstone flags. The flags outside the building had, however, sunk, and inspection revealed a round pit underneath them, which contained a considerable quantity of ordinary pottery fragments. The bottom of the pit was reached 10 feet below grass level. Under the paving a fragment of the bottom of a riveted Samian pot (Dragendorff 31) with the stamp CARVSSA was found.

Inside the block a lower millstone and half an upper one were found, and some red and yellow wall plaster. Just outside the east wall was a dark grey pear-shaped pot found standing upright, 1 foot 2 inches below the grass level. The pot was covered with an old red sandstone slab and contained the bones of a child.

To the north of Block L N were found rubbish pits, D, E, E 2, and F on plan.

Pit D at the end of the south boundary wall of the east yard of House no. XVII N contained various kinds of pottery from 3 feet down; at 6 feet 3 inches a well-preserved cream-coloured jug was found $7\frac{1}{4}$ inches high, with one handle and a bulging body tapering to the foot, and at 6 feet 6 inches an amphora with the mouth downwards. The bottom half was gone and the neck broken off; on the side were scratched the letters ^{VII} ADG.

At 8 feet down besides pottery a well-preserved horse's skull and a skull of *bos longifrons* were found. The ox had evidently been poleaxed. The bottom of the pit of solid clay was reached at 9 feet 9 inches below grass level. Pit E, south of Pit D, was only 5 feet 9 inches deep, and nothing of note was found. Pit E 2 was 6 feet 6 inches deep, and contained nothing worth noting. Pit F just north of Block L N contained a pear-shaped pot with a handle and the fragments of a glass bowl; the bottom was reached at 6 feet 6 inches below grass level.

What original purpose the space north of House no. XVIII N served cannot be said: it may have been a garden.

The whole of the space had been much disturbed. A portion of the foundation of the early wall just north of the *podium* of the temple could be traced, but only the south side of it. At the end of the continuation of the north wall of the temple area eastwards Pit A was discovered. The wall was roughly broken off, so that the construction of the pit may explain the wall ending so abruptly. In the pit a coin of Tetricus was found at about 5 feet below grass level, and some Samian pottery at about 6 feet down. One piece, the bottom of a cup (Dragendorff 33), had the stamp CELSIANI · F on it. The bottom of the pit was reached 13 feet below grass level.

Nothing more was found until at 11 feet from grass level a small sandstone statuette of a goddess (fig. 8) seated in an arm-chair came to light. The type

of face is not unlike that of the head found in 1902,¹ though the face is somewhat flatter.

Just east of Pit A was a concrete floor 3 feet 9 inches below grass level, and off it came a coin of Constantine Junior. To the north-east of this floor an enamelled bronze stand was found.² East of the floor a deep pit, marked C on plan, was also discovered, and some interesting finds were made. At 5 feet 6 inches below grass level a coin of Victorinus and some pottery were discovered, and at 8 feet down a bronze brooch and a good deal of Samian ware. From 8 feet to 12 feet a bowl (Dragendorff 37) with Déchelette 219 (dancing girl) combined with

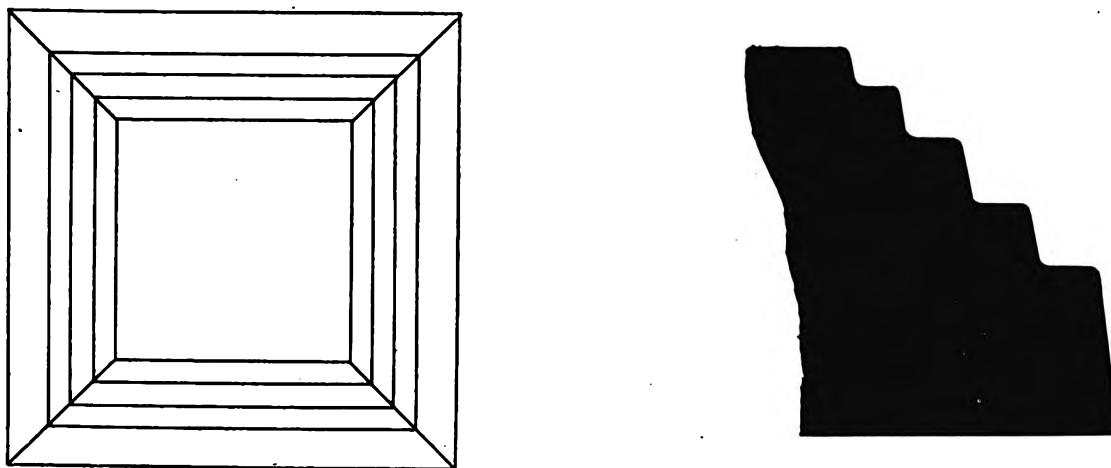


Fig. 7. Plan ($\frac{1}{16}$) and section ($\frac{1}{4}$) of small base from Pit C, north of House no. XVIII N.

191 (Venus and Adonis?). Part of the top stone of a quern was found at 11 feet down, and the other half at 12 feet. Samples of the mud were taken at 12 feet and 13 feet below grass level and sent to Mr. Lyell, who detected in them a considerable number of seeds.³ At 16 feet 3 inches down part of a large grey pear-shaped pot was found, and at 16 feet 6 inches a small base 8 inches in thickness (fig. 7).

From 18 feet to 20 feet down were found a piece of lead pipe, and some wood and rope, the latter continuing as far as 22 feet. Between 20 feet and 22 feet a fragment of a bowl (Dragendorff 37) with Cupid to right (Déchelette 236) was found. The bottom 2 feet 6 inches in diameter, in the hard clay, was reached at

¹ *Archaeologia*, lviii. 150.

² It is similar to one figured in the Catalogue of the Guildhall Museum, London, plate xiv. 65, and to one found in the south-west digging at Caerwent. Examples have also been found at Silchester.

³ These have been examined and identified by Mr. Clement Reid, whose report is given below.

16 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

22 feet 9 inches below grass level. The pit had apparently been sunk for a well, but never used as such.

A spring was found in the side of the pit, about 15 feet below grass level, where the diameter was 3 feet 5 inches. The spring was very slight, and quite insufficient for a well supply. The pit was therefore never excavated to a diameter sufficient to allow of the insertion of the stone lining.

Pit C 2 to the north-east of Pit C was a large irregular opening. About 1 foot down, on the top, a coin of Tetricus was found; and from 4 feet to 7 feet down some pottery. At 9 feet down a perfect brooch with some more pottery.



Fig. 8. Sandstone figure of a seated goddess.

The sculptured head of a god found in the south diggings, the seated goddess (fig. 8) found in 1908, and a small "domestic" altar found in 1909, are all carved from local yellow sandstone, and are no doubt of local manufacture. The distinguished French antiquary, M. Espérandieu, to whom photographs of these Caerwent images were forwarded, writes of the goddess: "C'est de l'art indigène, si toutefois il est permis de parler d'art lorsqu'il s'agit de choses qui en sont totalement dépourvues. Les diverses régions de la Gaule Celtique nous ont fourni un grand nombre de monuments figurés, dont l'analogie avec celui de Venta Silurum ne me paraît pas contestable." M. Espérandieu also forwarded some illustrations of various Gallo-Roman sculptures from his great work *Recueil général des bas-reliefs de la Gaule romaine*, some of which are similar to our Caerwent deities. It may be mentioned that in the Musée Carnavalet, in Paris, there

is a stone torso of a man or god, with a square hole at the neck, into which the head, now missing, fitted, it being carved out of a different stone; no doubt our Caerwent god was similarly constructed, and the head was only spared because it was of no use to the lime-burners who destroyed the limestone body.

HOUSE NO. XX N.

The eastern portion of this block has not yet been excavated, and it is not certain whether all these rooms belong to one house or not. It may be taken as one house with a courtyard in the middle or as two houses having a common courtyard. In the space between Houses nos. XIX N and XX N a quantity of pottery was found, and a coin of Carausius.

Both wings seem to have had access to the courtyard, but only the western block, so far as we know at present, had direct access to the street. Both wings of the building show considerable signs of alteration.

The west wing consists of six rooms arranged somewhat like those of House no. XIX N. In the northern part of the wing the walls had been much destroyed, and nothing was found worth recording.

In the south-west angle of Room 2 a curious circular oven or kiln was discovered. It is 6 feet in diameter, and seems to have opened from the east. The kiln was constructed of sandstone blocks and very regularly paved with sandstone slabs. On the south side the blocks forming the wall distinctly show that the inside was domed or of beehive shape. The whole of the kiln has been very much burnt, and as the floor was only a few inches below the turf nothing remained to show for what purpose it had been used. It may have been a domestic oven.

Room 3 had an entrance direct into the courtyard to the east over a threshold 5 feet wide. A small rubbish pit was found just north of the earlier wall which crosses the room from east to west. The whole of the area of this room was evidently made up with rubbish to bring it to the general level. The southern part of Room 3 had direct access to the street through a porch similar to the arrangement in House no. XIX. The paved floor level, which partly covered one of the early walls, was two steps below the level of the threshold stone. Under this slab floor a considerable amount of pottery was discovered. The best piece was a large portion of a plain Samian pot. Bottom was reached some 5 feet 6 inches down. A perfect quern was found along the east wall of Room 3.

Rooms 4 and 5 are similar in plan to Rooms 4 and 5 in House no. XIX N;

Room 5, here also, being an addition at some later time. The bottom in this Room 5 was reached well below the foundations of the wall, and the filling contained pottery fragments right down to the bottom.

Room 6 forms the south boundary of the courtyard and appears to have been entered from it only, no trace of a doorway into Room 4 having been found. On the north side of Room 6 a coin of Maximianus was found, and just above the early foundation the lower jaw of a human skull, 3 feet 6 inches below grass level. On each side of the early foundation traces of pitching were found, that on the south being of the same structure as street material, which it most probably was. The east wall of Room 6 forms the west wall of the entrance to the courtyard from the street. Built into the south-east corner of the room was a block of sandstone with a hole 9 inches square and 3 inches deep in it, seeming to mark the place where the doorpost stood. On pulling down the later south-west corner of Room 17, on the east side of the entrance passage, a somewhat similar stone was found, with a hole 7 inches square and 3 inches deep. This must have been the eastern side of the original gateway. At a later time the entrance had been reduced in width by the construction of the later west wall of Room 17, which also formed the eastern boundary of the courtyard.

The gateway between Rooms 6 and 17 was paved with hard-rammed gravel and stones, extending right over the early wall, and on a level with the street paving outside.

On the west side of the courtyard, 3 feet down, a good second brass of Hadrian was found. The paving of the courtyard was the same as in the gateway, but on the north side another level was traceable underneath; the bottom was reached 5 feet 9 inches down, and pottery was found all through the filling. There seems to have been a way through the courtyard to the back of the house between Rooms 2 and 8; the passage way has a wall across it, but the wall is only one course deep and roughly built.

Of the east wing, or block, of the house practically only the walls remain, and very few finds were made.

The rooms 7, 8, 9, 10, and 11 in the north portion all had concrete floors preserved, that in Rooms 9 and 11 being especially good brick cement. The only possible trace of a doorway was from Room 9 to Room 10. The west wall of Room 11 was built over the concrete floor, and its south wall still had white plaster *in situ*. The concrete floor in Room 11 had a wide trench in it, as if at some time a wall had stood there and been pulled out. On the east side of the trench with its face against the concrete a considerable quantity of white plaster was found.

The wall between Rooms 12 and 13 had a later wall built partly on the north side of it. The later work was only one course deep on a rough foundation.

Rooms 13 and 15 had very little in them, and it was impossible to trace their eastern limits as here we had come to the boundary of Lord Tredegar's property.

Room 14, a corridor, had a doorway into the courtyard, and the early courtyard wall was found running right through it. At 5 feet 4 inches down a mussel shell and fragments of Samian pottery and yellow plaster were found.

The walls of Rooms 16 and 17 had been destroyed, a modern rubbish pit being found here.

The ground north of House No. XX was thoroughly trenched but very little was found. Two rough boundary walls run northwards from the east wing of the house, and on the east side of the easternmost a small well was discovered. The diameter was 2 feet on the top and the masonry started about 1 foot 6 inches from grass level. Water was reached at 14 feet down, and some bones and black unglazed red pottery came from this level. At 15 feet down was a perfect black pear-shaped pot, slightly cracked. The pot must have been thrown into the water or else it would have been smashed to pieces. Some more pottery fragments and a jaw-bone of an ox were found. The bottom was reached at 16 feet 6 inches from grass level, and a sample of the mud was taken, in which Mr. Lyell found seeds of several plants, identified later by Mr. Clement Reid, who gives a list of between fifty and sixty plants, chiefly from Pit C, and reports as follows:—

This is the usual flora of Roman Britain, with the same group of cultivated plants and weeds of cultivation as is found in other excavations, and the same singular absence of some of our most common species. A few of the plants have not been recorded before.

The opium-poppy is a new discovery at Caerwent, though it has been found on several occasions in Roman Silchester; its seeds were scattered on bread. The greater celandine is a plant only found in the neighbourhood of houses, and was formerly in use for curing warts; it is not improbable that it was used for medicinal purposes in Roman Britain; it has been found at Silchester also. The cultivated pea is rare on Roman sites. Seeds of coriander and dill were in common use in Rome as condiments or spices. Alexanders is a pot-herb only found near villages: it is a new record for Roman Britain. The deadly nightshade, or belladonna, was in common use in Rome for enlarging the pupils of the eye; it is one of the commonest plants in Roman Britain. Neither the vine nor the fig, both common at Silchester, has yet been discovered at Caerwent.¹

Just west of the termination of the long wall was a small pit, F 2. Nothing of any note was found in it. Bottom was reached at 8 feet 6 inches from grass level.

Another long boundary wall was discovered to the north of the pit. The wall turns north at its western end and connects up with the boundary walls of House

¹ The greater celandine still grows in profusion at Caerwent. Alexanders is an abundant plant on the "Roman" camp at Clifton.—H.

20 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

no. VII n. At the angle where the wall turns north a very irregular-shaped pit was found. The pit was probably used for digging gravel or sand. Nothing was found in it.

The annexed plan (fig. 9) shows the progress of the excavations down to the end of 1909.

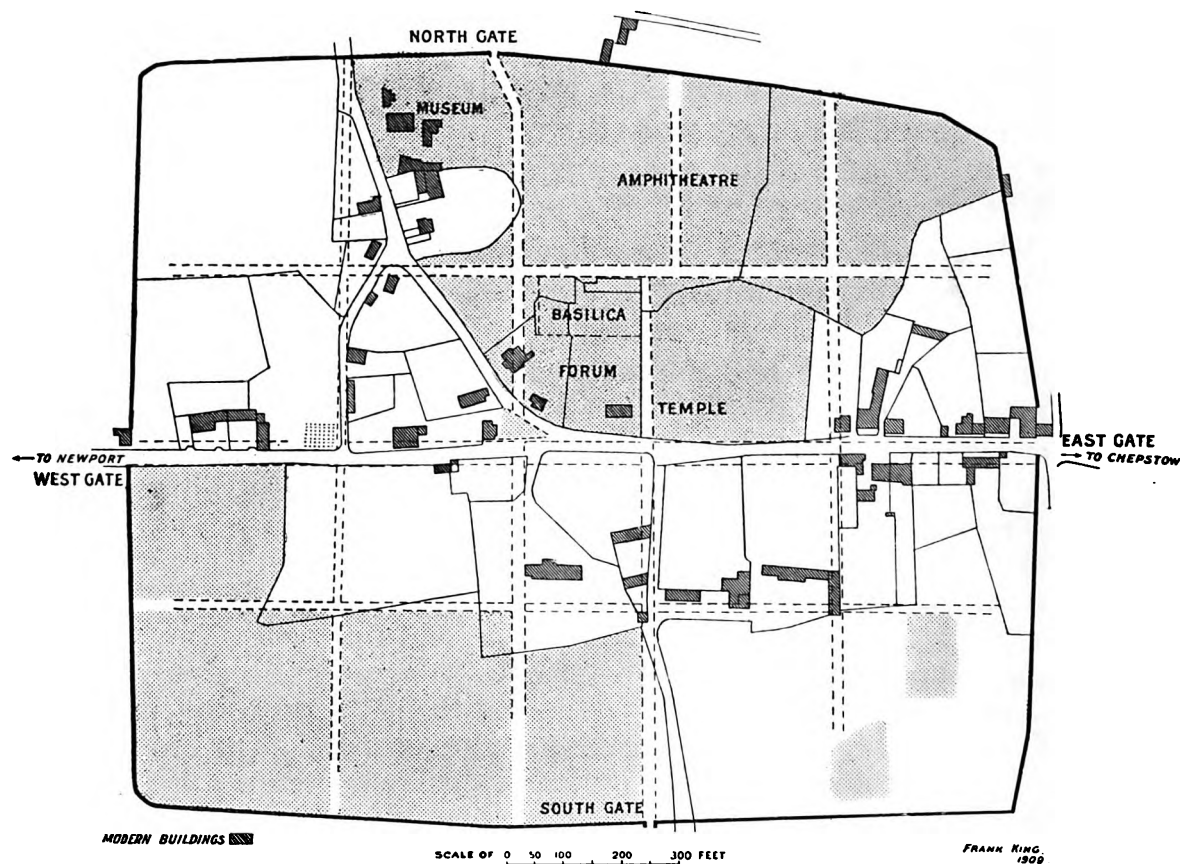
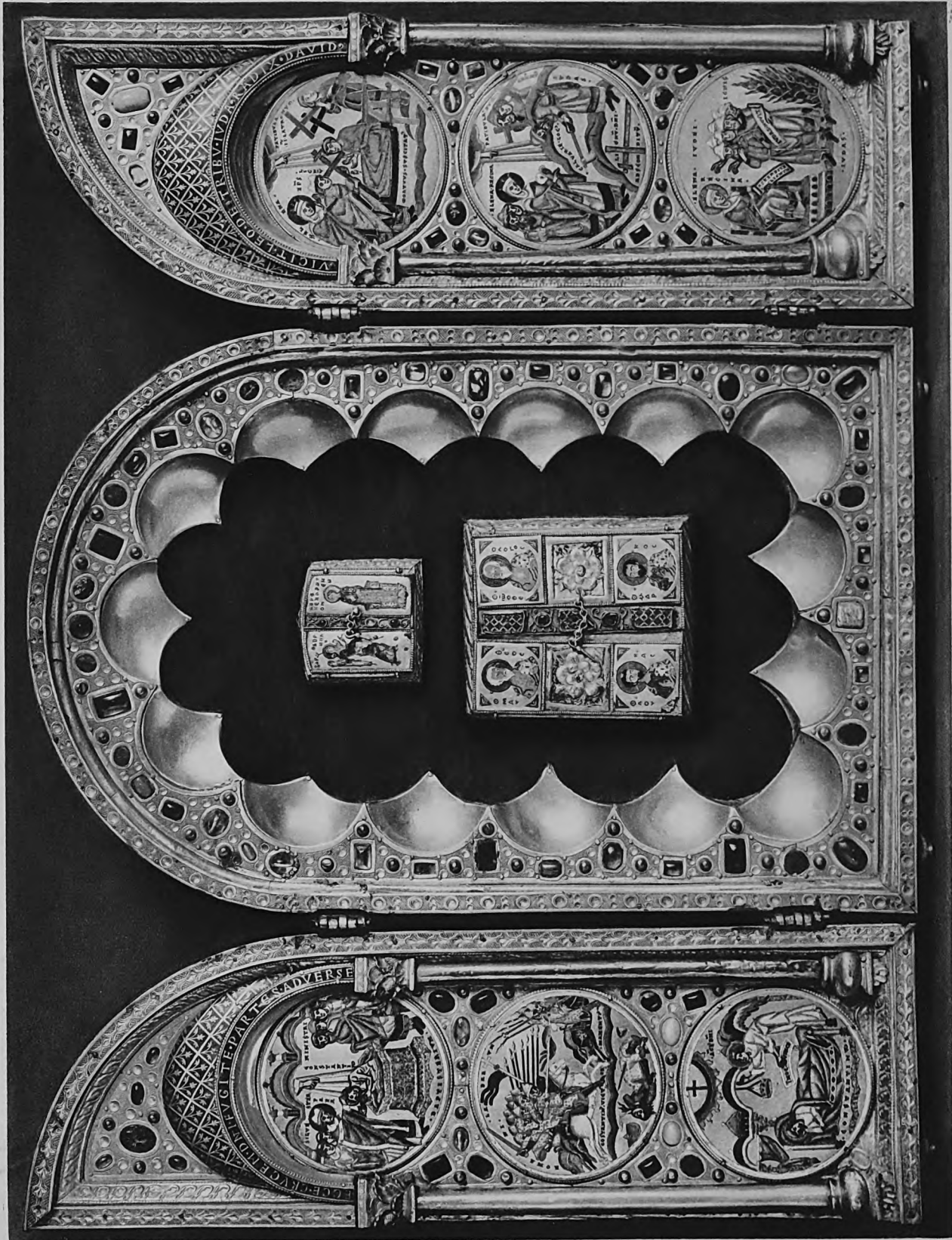


Fig. 9. Block-plan of Caerwent, showing the parts excavated down to the end of 1909.

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TRIPTYCH OF THE TWELFTH CENTURY FROM THE ABBEY OF STAVELOT IN BELGIUM (3)

Published by the Society of Antiquaries of London, 1910.

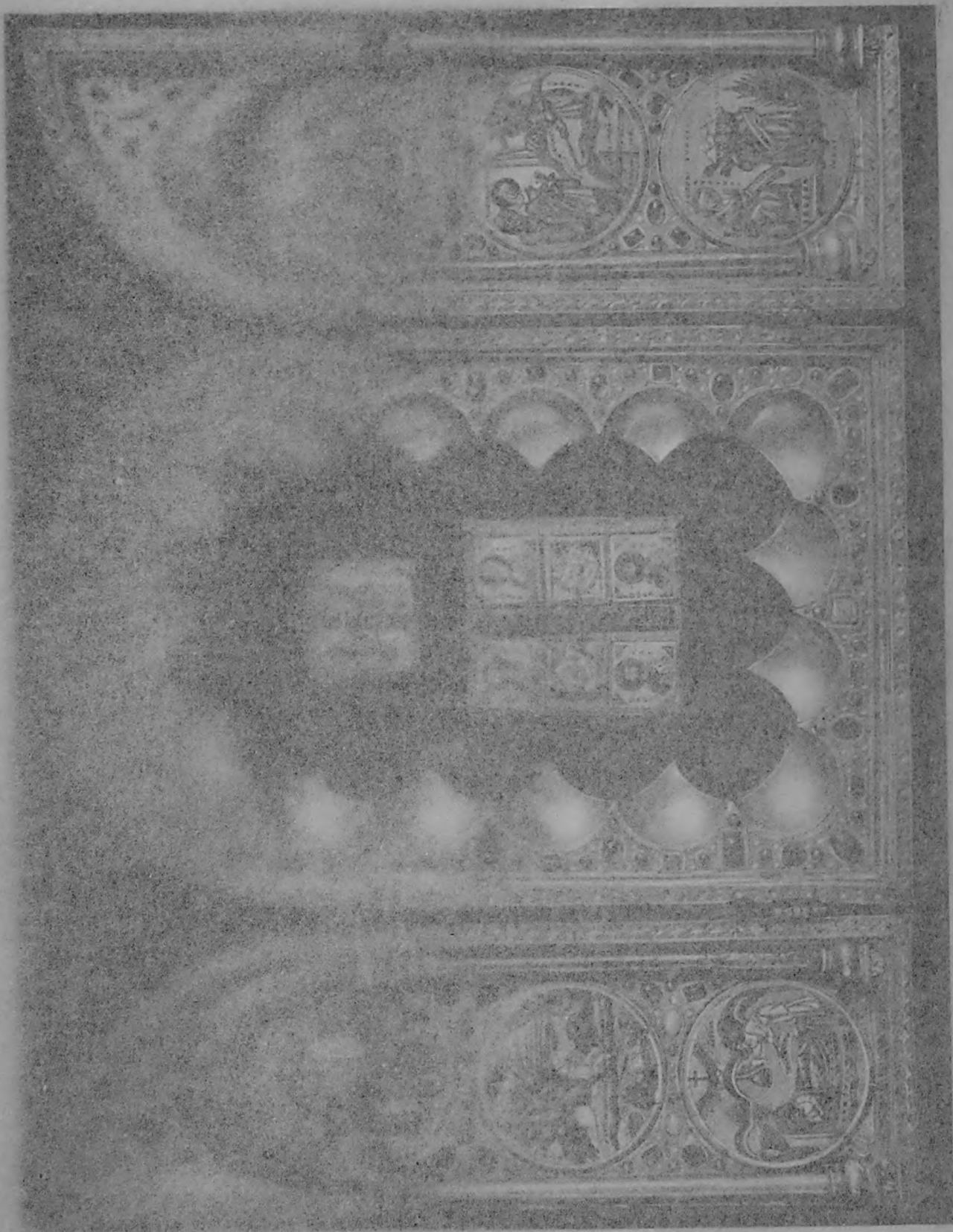
II.—*On a triptych of the Twelfth Century from the Abbey of Stavelot in Belgium containing portions of the True Cross.* By CHARLES VENABLE, LL.D., President.

Read 2nd December, 1909

FROM time to time the Society has the privilege of examining and seeing important examples of mediaeval art brought to its notice. In the past few years these a fair number are fortunately in the safe keeping of museums and public bodies in this country, and such are mainly the most important. To be sure, our mind treasures like the relics of the Black Primer at Canterbury, or the "King John's Cup" at Lynn. Such legacies as these are not likely to be lost on our shores, short of some national catastrophe. For the rest, still very numerous, that remain in private hands, there can be no doubt that the time is rather in favour of their finding homes in foreign museums or collections. Our riches in such directions, however, help to make London a market or exchange for works of art; and the wealthy buyer is forced to compete to increase his collections. In this way we have before us this evening a large amount of mediaeval art workmanship of a kind and importance that is but seldom found in the open market.

In addition to its intrinsic and obvious merits, the triptych has an interesting and chequered history. Its more recent vicissitudes suffice to connect it with the Abbey of Stavelot (Stablo) in the Ardennes, an important link of the chain of evidence that will carry us back to the twelfth century, the period of its manufacture.

The body of the triptych is made of oak, covered on the back with velvet, once red; the middle panel has a semicircular top, the two wings in the usual form of half arches closing over and covering the middle (plate II). The principal features in the latter are the relics in their shrines, a fragment of a nail above, and two pieces of the Cross in another shrine below, disposed in a cruciform fashion. Each of these shrines is, in triptych form, and set with plaques of cloisonné enamel on gold, evidently of Byzantine make, though adapted to their present positions and use by the Western maker of the relic-shrine. These will be described in detail later on. These two Byzantine triptychs are square in form, the lower one, containing the pieces of the Cross, being much larger than the other; they are set on a plain ground of cloth, with no ornament near them (in itself



TRIFTYCH OF THE TWELFTH CENTURY FROM THE ABBEY OF STAVELOT IN BELGIUM (H)

Presented by the Society of Antiquaries of London 1816

II.—*On a triptych of the Twelfth Century from the Abbey of Stavelot in Belgium, containing portions of the True Cross.* By CHARLES HERCULES READ, Esq., LL.D., President.

Read 2nd December, 1909.

FROM time to time the Society has the privilege of examining and publishing important examples of mediaeval art brought to its notice by the Fellows. Of these a fair number are fortunately in the safe keeping of museums or corporate bodies in this country, and such are mainly the most important. I have in my mind treasures like the relics of the Black Prince at Canterbury [would that they were better cared for !], the crozier of William of Wykeham at New College, and "King John's Cup" at Lynn. Such legacies as these are not likely to leave our shores, short of some national catastrophe. For the rest, still very numerous, that remain in private hands, there can be no doubt that the tendency at the present time is rather in favour of their finding homes in foreign than in English collections. Our riches in such directions, however, help to make London a market or exchange for works of art, and the wealthy buyer is forced to come here to increase his collections. In this way we have before us this evening a monument of mediaeval art workmanship of a kind and importance that is but seldom found in the open market.

In addition to its intrinsic and obvious merits, the triptych has an interesting and chequered history. Its more recent vicissitudes suffice to connect it with the Abbey of Stavelot (Stablo) in the Ardennes, an important link of the chain of evidence that will carry us back to the twelfth century, the period of its manufacture.

The body of the triptych is made of oak, covered on the back with velvet, once red; the middle panel has a semicircular top, the two wings in the usual form of half arches closing over and covering the middle (plate II). The principal features in the latter are the relics in their shrines, a fragment of a nail above, and two pieces of the Cross in another shrine below, disposed in a cruciform fashion. Each of these shrines is in triptych form, and set with plaques of cloisonné enamel on gold, evidently of Byzantine make, though adapted to their present positions and use by the Western maker of the relic-shrine. These will be described in detail later on. These two Byzantine triptychs are square in form, the lower one, containing the pieces of the Cross, being much larger than the other; they are set on a plain ground of cloth, with no ornament near them (in itself

a curious and unusual arrangement ¹⁾ until we come to the broad and rich border of gilded copper edging the panel. The inner edge of this border is formed of fifteen concave plain cusps, beyond which is a hatched ground enriched with cabochon gems, or imitation gems, alternating with circular depressions which, catching the light, add considerably to the brilliancy of the general effect. The extreme edge of the middle panel has a raised border with similar hollows, and immediately within it is a plain moulding in gold. The two wings are symmetrical in design. The subjects in each are contained within an arch with plain silver columns having floriated capitals and globular bases, gilt; the semicircular arch is inscribed in capital letters on blue ground ECCE CRUCEM DNI FUGITE PARTES ADVERSE, on one arch, and on the other VICIT LEO DE TRIBU IUDÆ RADIX DAVID; above each arch is a dome having a gilt trellis-work on a peach-coloured enamel ground. The remaining space is filled with a hatched ground enriched with gems as in the middle panel, and the outer edging also corresponds. Within the arches just described are six circular medallions of copper gilt and ornamented with subjects in champlevé enamel, three in either wing. The spaces between them are again filled with the same pattern of background as in the border of the middle panel, viz. hatching interspersed with gems and concave gilt depressions. The appearance of these medallions is of unusual brilliancy and richness, even for the productions of the Mosan school of enamelling, which, next to that of Byzantium, is undoubtedly the most remarkable for these attractive qualities. The ground being throughout of richly coloured gilding provides a gorgeous background for the polished enamels, and we thus have a truly attractive general effect due to the bold juxtaposition of the brightest tints. The colours used comprise a shaded blue, green, turquoise, white, and scarlet, with here and there translucent crimson (*e.g.* in the fire where the Empress Helena receives the Jews), as well as a pale plum colour; the borders are white. In the medallions on the dexter wing (plate IV) the subjects refer to the Conversion of the Emperor Constantine, on the sinister to the Invention of the Cross (plate III). In both cases the story begins at the bottom of the series. Thus in the lowest medallion of the dexter side is represented Constantine asleep, with the *Angelus Domini* standing beside the bed holding a scroll inscribed IN HOC VINCES; behind are two arches representing the palace, and above is the Cross within an arc of clouds. The next medallion represents the Battle of the Milvian Bridge, in which Constantine overthrows Maxentius. This medallion is the most brilliantly coloured of the series, and the

¹ A comparison with other similar works of the time, and particularly the triptychs in the Église de la Sainte Croix at Liège and in the Dutuit Collection in the Petit Palais in Paris, makes it almost certain that the middle panel in this triptych originally had supporting figures for the relics. It is not conceivable that a twelfth-century artist would have left the field immediately around the central subject so entirely devoid of ornament.



MEDALLIONS ON THE SIXTH LEAF OF THE STAVELOT TRIPTYCH (4)

Published by the Society of Antiquaries of London, 1910

a curious and unusual arrangement¹⁾ until we come to the broad and rich border of gilded copper edging the panel. The inner edge of this border is formed of fifteen concave plain cusps, beyond which is a hatched ground enriched with cabochon gems, or imitation gems, alternating with circular depressions which, catching the light, add considerably to the brilliancy of the general effect. The extreme edge of the middle panel has a raised border with similar hollows, and immediately within it is a plain moulding in gold. The two wings are symmetrical in design. The subjects in each are contained within an arch with plain silver columns having fluted capitals and globular bases, gilt; the semicircular arch above them is decorated with letters on blue ground ECCE CRUCEM DNI FUGITE PARTES AGENTIS²⁾ on the left, and on the other VICIT LEO DE TRIBU IUDÆ RADIX DAVID; the space between the arches having a gilt trellis-work on a peach-coloured enamel ground. The intervening space is filled with a hatched ground enriched with gems and the outer edging also corresponds. Within the arches are three circular medallions, of copper gilt and ornamented with enamel, three in either wing. The spaces between them are filled with the same pattern of background as in the border of the middle panel, and are interspersed with gems and concave gilt depressions. The brilliancy of these medallions is of unusual brilliancy and richness, even for the Mosan school of enamelling, which, next to that of Byzantium, is probably the most remarkable for these attractive qualities. The ground of the medallions is of richly coloured gilding provides a gorgeous background for the subjects, and we thus have a truly attractive general effect due to the combination of the brightest tints. The colours used comprise a shaded green, yellow, white, and scarlet, with here and there translucent crimson. The subjects are the Empress Helena receives the Jews, as well as a pale figure, the figures are white. In the medallions on the dexter wing are the Conversion of the Emperor Constantine, on the left the Invention of the Cross (plate III). In both cases the story is the first of the series. Thus in the lowest medallion of the dexter wing is Constantine asleep, with the *Angelus Domini* standing beside him, the inscription IN HOC VINCES; behind are two arches representing the Cross within an arc of clouds. The next medallion is the Battle of the Milvian Bridge, in which Constantine overthrows Maxentius. The medallion is the most brilliantly coloured of the series, and the

¹⁾ Compare it with other similar works of the time, and particularly the triptychs in the Église de Saint-Étienne in Le Mans, and in the Depot Collection in the Petit Palais in Paris, makes it almost certain that the central panel in this triptych originally had supporting figures for the relics. It is not conceivable that a twelfth-century artist would have left the field immediately around the central subject so empty.

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MEDALLIONS ON THE DEXTER LEAF OF THE STAVELOT TRIPTYCH. $\frac{1}{1}$

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composition is more vigorous and full of action than the others, and recalls similar scenes in manuscripts of the fourteenth century. The uppermost medallion shows the baptism of Constantine by Pope Silvester. The Emperor is standing naked in a hexagonal well-like font, the Pope on one side places hands upon his head, and on the other stand *Ministri*. Above is a triple arch, from the midst of which descend rays with the Hand of the Almighty.

The three scenes on the sinister leaf give the story of the Finding of the Cross (plate III). The version adopted incorporates the features introduced into the narrative at the close of the fourth, and in the course of the fifth century.¹ The story, which begins at the bottom and reads upwards, is as follows: In the lowest medallion the Empress Helena, enthroned, receives the group of Jews from whom she demands information as to the site on which to excavate; she holds in her hand a scroll with the words *OSTENDITE LIGNVM*. On the extreme right is the fire in which the Jews are to be burned if they refuse to tell all that they know. The scroll marked *IVDAS NOVIT*, carried by one of the group, indicates that his countrymen have betrayed the foremost figure, Judas, as the real possessor of the secret. In the middle medallion, Helena stands on the left, before high ground marked *CALVARIE LOCVS*. On the right, Judas hoes up the ground, in which is seen the Cross of Christ between an inscription in two lines: *LIGNVM DOMINI ABSCONDITVR*. In the background, two figures bear the already discovered crosses of the two thieves, marked *PATIBVLA DVORVM LATRONVM*. Above is the Hand of the Almighty issuing from rays of light.

The uppermost medallion shows the dead man raised to life upon his bier by virtue of the cross held by Macarius, the Bishop of Jerusalem. Behind the Bishop stands Helen; and on the right, a man carries away the two crosses of the thieves, which have failed to perform the miracle.

The Byzantine enamels² of the two small triptychs are executed by the cloisonné process, with backgrounds of plain gold.³ They produce the sumptuous

¹ These features are the discovery of three crosses instead of one (mentioned by SS. Ambrose and Chrysostom); the identification of our Lord's cross by a miracle performed by it (Paulinus, Theodoret, Sulpicius, Rufinus, Socrates, Sozomen). Several of these authors state that the nails were found with the cross; and Paulinus relates the further miracle that the portion of the cross kept at Jerusalem gave off fragments without diminishing (Newman, *Essays on Miracles*, 299, 300). The apocryphal Story of Judas was condemned by Pope Gelasius in A.D. 494, but nevertheless obtained currency and was accepted through the Middle Ages (*Acta Sanctorum*, May, vol. iii. 367).

² I am indebted to my colleague, Mr. O. M. Dalton, for kindly describing these Byzantine enamels. He has recently made a special study of this class of work, and it therefore seemed to me that the Society would gain by his collaboration.

³ Byzantine enamels are very rarely executed by any other process, though the backgrounds are often also covered with enamel. The best-known example in which the champlevé process is employed is the large plaque representing St. Theodore, formerly in the Basilewsky Collection, and now in the Hermitage at St. Petersburg (Darcel and Basilewsky, *La Collection Basilewsky*, plate xiv; Labarte, *His-*

effect in which such enamels seldom fail; with their richness of colour, and the subdued reflection from the surrounding gold, they possess, if we may compare small things with great, something of the charm of the mosaics in Byzantine churches. Although upon a close examination they are hardly equal to the finest existing work of this kind, yet, viewed from a short distance, they are similar in their decorative effect.

The accompanying illustrations will give an excellent idea of their general character (plates V, VI, VII). The larger has in the interior the relic, in the shape of a wooden cross, above which two bands of gold terminating in four pearls are fixed in the form of a saltire (plate V). Four enamelled plaques fill the spaces between the arms: the upper two contain half-figures of the Archangels Gabriel and Michael; the lower two, standing figures of Constantine and Helen: the surrounding metal-work is of Flemish and not Byzantine origin. The wings, which are surrounded by borders of inlaid red glass pastes, apparently of Western workmanship, contain in the interior four plaques, each with a standing figure of a saint, the persons represented being SS. George, Procopius, Theodore and Demetrius. All the figures in the interior are accompanied by their names in enamel.

On the exterior (plate VI), the leaves have also mounts of Western origin, and the embossed flowers of the middle panels are in like manner Western. The four other panels contain gold plaques with Byzantine enamels representing busts of the four Evangelists, St. John, as is usual in Byzantine art, appearing as an old man with a white beard. All are accompanied by names, and by small enamelled corner-pieces which give the central space of each plaque the appearance of a circular medallion. On the flange of the right wing, which covers the median line when the triptych is closed, are set three fragments of mosaic-like cloisonné enamel of a common Byzantine design.

The smaller triptych has also been remounted or repaired in the West. It has in the interior a Byzantine enamelled panel with the Crucifixion between the Virgin and St. John with the usual accompanying inscriptions: "Behold thy Son," and "Behold thy Mother": above are the sun and moon.

In the interior, the leaves have only filigree and gems of Western origin; but upon the outside are two enamelled plaques, together representing the Annuncia-

toire des arts industriels, Album, ii. plate 105); even here the *champlevé* work is only partial. The metal used by the enamellers was almost always gold, or perhaps a fine alloy: copper is occasionally found, as in the Basilewsky plaque above mentioned, and in a medallion in the British Museum described before the Society in May, 1906 (*Proceedings*, 2nd S. xxi. 194). This medallion has enamels on both sides, a rare but not unprecedented feature. Of the method of firing employed by Byzantine enamellers we know little. It may be assumed that their apparatus, if less elaborate than that necessary in modern times when furnaces are heated with coal or gas, was rather more complete than those described by Theophilus about A.D. 1100 (*Diversarum Artium Schedula*, iii. 54).

tion. On the left is the archangel bearing a floriated wand; on the right the Virgin stands in front of her seat, and holds the spindle in her left hand. Above her head is the inscription, "Hail! thou that art highly favoured."

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¹ E. Aus'm Weerth, *Das Siegeskreuz der Byzant. Kaiser Constantinus VII. und Romanus II*, 1861, plate I; Labarte, *Histoire des arts industriels*, ii. 83 ff.; N. Kondakoff, *Die byzantinischen Zellschmelze der Sammlung Dr. Alexis von Swenigorodskoi*, 209.

² F. Bock, *Kleinodien des heiligen Römischen Reichs*, plate 38; E. Molinier, *L'orfèvrerie*, 52; Pulszky, Radisiès, and Molinier, *Chefs-d'œuvre d'orfèvrerie à l'Exposition de Budapest*; Kondakoff, as above 2 and 3 ff.

³ Kondakoff, as above, pp. 135 ff. and figs.; G. Schlumberger, *L'Épopée byzantine*, i. 137, 188.

⁴ Barbier de Montault, *Le trésor de Sainte-Croix de Poitiers*, plate i; E. Molinier, *L'orfèvrerie*, 38–40.

⁵ G. Stephens, *Queen Dagmar's Cross*, 1863; Kondakoff, as above, 178, figs. 51 and 52; *Archæological Journal*, ii. 166; E. Molinier, *L'orfèvrerie*, 57.

⁶ Ph. Lauer, *Monuments et Mémoires, Fondation Eugène Piot*, xv, 1906, 36 ff. and plate vi; *Edinburgh Review*, no. 420, 1907, p. 471; *Civiltà Cattolica*, 1906, part ii.

⁷ Cloisonné enamelling may have been practised at Constantinople as early as Constantine, and is certainly as old as Justinian, though the region from which it was introduced into the capital is not known with certainty. The majority of existing Byzantine enamels belong to the period between the close of the iconoclastic disturbance and the thirteenth century.

effect in which such enamels seldom fail; with their richness of colour, and the subdued reflection from the surrounding gold, they possess, if we may compare small things with great, something of the charm of the mosaics in Byzantine churches. Although upon a close examination they are hardly equal to the finest existing work of this kind, yet, viewed from a short distance, they are similar in their decorative effect.

The accompanying illustrations will give an excellent idea of their general character (plates V, VI, VII). The larger has in the interior the relic, in the shape of a wooden cross, above which two bands of gold terminating in four pearls are fixed in the form of a saltire (plate V). Four enamelled plaques fill the spaces between the arms: the upper two contain half-figures of the Archangels Gabriel and Michael; the lower two, standing figures of Constantine and Helen: the surrounding metal-work is of Flemish and not Byzantine origin. The wings, which are surrounded by borders of inlaid red glass pastes, apparently of Western workmanship, contain in the interior four plaques, each with a standing figure of a saint, the persons represented being SS. George, Procopius, Theodore and Demetrius. All the figures in the interior are accompanied by their names in enamel.

On the exterior (plate VI), the leaves have also mounts of Western origin, and the embossed flowers of the middle panels are in like manner Western. The four other panels contain gold plaques with Byzantine enamels representing busts of the four Evangelists, St. John, as is usual in Byzantine art, appearing as an old man with a white beard. All are accompanied by names, and by small enamelled corner-pieces which give the central space of each plaque the appearance of a circular medallion. On the flange of the right wing, which covers the median line when the triptych is closed, are set three fragments of mosaic-like cloisonné enamel of a common Byzantine design.

The smaller triptych has also been remounted or repaired in the West. It has in the interior a Byzantine enamelled panel with the Crucifixion between the Virgin and St. John with the usual accompanying inscriptions: "Behold thy Son," and "Behold thy Mother": above are the sun and moon.

In the interior, the leaves have only filigree and gems of Western origin; but upon the outside are two enamelled plaques, together representing the Annuncia-

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those of the flourishing period of Byzantine enamelling between the second half of the tenth century and the sack of Constantinople in A.D. 1204, we shall be disposed to place the present small triptychs after the middle of the period. If they have not all the qualities of the Limburg reliquary, they are superior to the work produced after the middle of the twelfth century. At that time the tones became harder and the general effect more dry; the flesh tints lost their colour and became a dead unnatural white; we may compare a similar degradation in the case of the painted enamels of Limoges, where the flesh tints of Suzanne de Court are distinguished in a similar way from those of earlier and better artists. These defects are not conspicuous in the work now under discussion, and it seems on the whole probable that these enamels had not been long in existence when Wibald took them home from Constantinople in 1155 or 1157. The first half of the twelfth century, or at the earliest the close of the eleventh, would appear to be their most probable date.¹ It has already been observed that their appearance has been changed by the additions made in the West by Flemish goldsmiths.

The relic of the True Cross, if obtained by Wibald, thus left Constantinople about half a century before the majority of similar objects which formed part of the Crusader's loot, and were distributed throughout Europe after the sack of A. D. 1204.² It may be recalled that a gold cross containing a relic of the wood, once belonging to Baldwin I, became a valued possession of Bromholm Priory in Norfolk, whence it probably disappeared at the Reformation.³

The modern history of this triptych seems to be well confirmed and to establish its connexion with the Abbey of Stavelot. In November, 1792, the French army had just entered Liège. The Prince Abbot of Stavelot, Cornelis Thys, fled from his abbey for refuge beyond the Rhine, where the Chapter had already sent for safe custody the archives and plate of the community. The retable of the high altar seems to have been carried away on this occasion, for it is related by Thomassin⁴ that in 1794 the metal composing it was melted down, and served for the support of the fugitive abbot and his companions in their exile. From another account it would appear that the abbot obtained hospitality eventually with a family named Walz living at Hanau, near Frankfurt. On his departure he left with them a large, heavy chest, and this was

¹ See also Kondakoff, 220; F. Bock, *Byzantinische Zellenschmelze*, 181-4.

² See Comte Riaut, *Des dépouilles religieuses enlevées à Constantinople au XIII^e siècle par les Latins*, etc.; in *Mémoires de la Société nationale des Antiquaires de France*, vol. xxxvi. (Separate copy in the Library of the British Museum.)

³ *Ibid.* 57, 189. The original information is derived from Ralph of Coggeshall, ed. Duncin, 1852, p. cxxv, and Roger of Wendover, *Chronicon* (ed. of the English Historical Society, 1841-5), iv. 90. This relic was abstracted from Baldwin's treasure by an English chaplain, who brought it to his own country and disposed of it there.

⁴ *Mémoire statistique du département de l'Ourthe*, 1879, p. 250.



BYZANTINE TRIPTYCH WITH A RELIC OF THE TRUE CROSS, OPEN. $\frac{1}{1}$

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consigned to an attic, where it remained for years. On being opened it was found to contain a number of church vestments and other similar things, among them the triptych now in question. The Walz family distributed the vestments among the religious foundations of the neighbourhood, but retained the triptych, which has been preserved as a precious relic for about a century. The owner has consistently refused to lend the triptych to exhibitions, and it did not even figure in the splendid collection of enamels shown at Düsseldorf in 1902. It has therefore remained in seclusion, and comparatively but little known, up to a few weeks ago, when Mr. Durlacher persuaded the owner to cede it to him.

This story, joined to the style and appearance of the work itself, furnishes good *prima facie* evidence of the Stavelot origin of the triptych. But a still closer bond is claimed for it by Dr. Franz Bock.¹ In describing the Byzantine enamels in the well-known Svenigorodskoi collection, he takes the opportunity of comparing with them any other specimens of the same kind of work that he has been able to trace, and among his descriptions he includes that of the Hanau triptych. He made independent investigations on his own behalf, though he gives no details of what these were, and comes to the conclusion, not only that he had before him a real relic of the vanished glories of the abbey church of Stavelot, but further that it was an example of the pious luxury of the great Abbot Wibald, the learned statesman and counsellor of emperors, who died in 1158. This particular conclusion he finds on a description of the church of Stavelot written in the eighteenth century by two Benedictines named Martène and Durand and published in their *Voyage littéraire de deux religieux bénédictins de la Congrégation de S' Maur* (Paris, 1724). They were much struck by the riches of the monastery, and particularly the good order in which the muniments were kept: "Dans une ancienne chapelle, qu'on dit que l'abbé Wibaldus s'étoit faire bâtir sur le modèle de Sainte Sophie à Constantinople. Nous y vîmes un ancien cartulaire, qui renferme un si grand nombre de chartes des rois de la première race, qu'il n'y a que Saint Denys qui puisse lui disputer pour le nombre." In connexion with the present subject, it is of interest to note that further on they call attention to "une très-belle croix d'or, dans laquelle il y a du bois de la vraie croix, que Wibaldus rapporta de Constantinople, et le chef de Saint Alexandre martyr". What, however, principally concerns us, in connexion with Dr. Bock's theory, is their description of the high altar. They say: "The decorations of the church are very beautiful . . . the altar magnificent. The front, of silver gilt, represents the descent of the Holy Ghost on the Apostles, whose figures are in relief, with this inscription, *Factus est repente sonus tamquam advenientis spiritus vehementis, et repleti sunt omnes Spiritu Sancto*. The retable, much richer, is in solid gold. It represents the chief mysteries of

¹ *Byzantinische Zellschmelze.*

the Passion and Resurrection of Our Lord. It is the work of the great Wibald, whose figure stands on one side, and on the other that of the Empress Irene." This description, written in the year 1718, is perfectly clear, and is, in addition, confirmed by that of Saumery,¹ who uses almost identical words in describing the altar and retable, little more than twenty years later.

But confusion is imported into the matter by a discovery made in the archives at Liège in 1882. M. van de Casteele, the keeper, found among a number of papers relating to an action at law brought by the abbey of Stavelot in 1662, a drawing of the retable of the altar at Stavelot, which differs materially and essentially from the description given above. In place of the mysteries of the Passion, the drawing shows a series of scenes from the life of St. Remaclus, the patron saint of the monastery, and there is no sign of the figures of Wibald or the Empress. Nevertheless, in a prominent position on the retable, as shown in the drawing, is a long inscription, beginning "Hoc opus fecit abbas Wibaldus"; with a note of the cost (100 marcs in all) and a penal clause against any one destroying it.

It might be urged that the drawing is fanciful, and represents something that had no actual existence; but the contrary seems to be fairly proved by the existence of two of the enamelled medallions forming part of it, which are still preserved in the princely museum at Sigmaringen. They are shown in colours in Dr. von Falke's monumental work,² and from the figure would seem to be of bolder and somewhat coarser work than the medallions on the Hanau triptych, and in my judgement do not serve materially in deciding its authorship.

Although, however, it would be satisfactory if the statements of the Benedictines could be reconciled with the Liège drawing, it is not really essential to the present subject to effect the agreement. The evidence for the triptych is fairly conclusive of its connexion with the abbey of Stavelot; the character of the work is in itself so marked, and is directly comparable with so many dated examples of the same kind, that it can be safely set down as of the time of the great Abbot Wibald, and we thus get two facts that help us towards determining one other point of interest, viz. the name of the artist who made it.

The Benedictine travellers speak of Wibald as "the great", and in truth he appears to have been a remarkable man. A member of the most learned of the monastic orders, he led a busy and useful life.³ As statesman, as the intimate counsellor of the German emperors, and their intermediary with the Popes in weighty affairs of state, he might have found occupation enough. But he still found time and energy for the official labours of his abbacy, which comprised

¹ *Délices du Pays de Liège*, 1743.

² *Deutsche Schmelzarbeiten*, plate xxiv.

³ See J. Janssen, *Wibald von Stablo und Corvey*, Münster, 1854.



BYZANTINE TRIPTYCH WITH A RELIC OF THE TRUE CROSS, CLOSED. $\frac{1}{1}$

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the supervision of three establishments, that of Stavelot, of Corvey in North Germany, and of Monte Cassino in South Italy, and he particularly devoted himself to the embellishment of his churches, especially of that at Stavelot. Born in 1098, he was educated at Stavelot, and was known as one of the most learned men of his time; he became abbot in 1130, and died in 1158. In spite of his numerous avocations and manifold responsibilities he found time to make two pilgrimages to Constantinople, as we have seen.

The numerous relics of church furniture of the twelfth century still remaining in the Meuse and Rhine districts amply show how important was this branch of artistic development, and it can scarcely be doubted that a personage of the standing of Abbot Wibald would have had in his employ the best craftsmen that the time and the country could provide. The evidence on the subject is unfortunately slight. In 1148 the abbot writes a letter to "the goldsmith G.",¹ pressing for the delivery of certain work he had ordered. This reference has been generally accepted by the authorities as indicating the well-known artificer Godefroi de Claire. This artist was himself a person of some distinction. A Walloon and citizen of Huy, he had been in the train of the emperors Lothair and Conrad III., by which he had not only acquired great wealth, but had also become an important personage. In 1174 Radulphus de Zaehringen, Bishop of Liège, caused the bodies of the saints Mangold and Domitian to be encased in two shrines richly worked, the shrines having been made by the celebrated goldsmith Godefroi de Claire, called the Noble, and placed in the church of Notre Dame at Huy.² Towards the end of his life he made large gifts to churches, particularly to that of Neufmostier, where he ultimately entered as a regular Augustinian canon and spent the rest of his life, still continuing, however, to work at his art.

In an original manuscript necrology of this abbey (which has the additional interest as containing the name of Peter the Hermit) the name of Godefroi is entered as follows, without any year³:

November D^o viii K^o Commemoratio Godefridi aurificis fratris nostri (another later hand adds, in the same line) Iste Godefridus aurifaber civis Hoyensis et postmodum ecclesie nostre concanonicus vir in aurifabricatura suo tempore nulli secundus per diversas regiones plurima sanctorum fecit feretra et cetera regum vasa utensilia. Nam in ecclesia Hoyensi duo composuit feretra, turibulum, &c.

¹ Jaffé, *Biblioth. Rer. Germ.* i. 194.

² Laurent Mélat, *L'histoire de la ville et chateau de Huy*. M. Vierset Godin cites a little book printed in 1685, entitled *Incunabula Ecclesia Hoyensis*, giving an inventory of the treasures of the collegiate church at Huy, drawn up in 1274 by Joannes de Appia, the warden. This inventory states that these shrines were made at the costs of the Chapter by Godefroi de Claire, otherwise called the Noble, and that the bodies were solemnly placed in them in the year 1172 or 1173. Gilles d'Orval, a contemporary chronicler, gives the actual date as June 15, 1173 (*Bulletin des Commissions royales d'art et d'archéologie*, I^{re} Année, 1862, p. 397).

³ *Bulletin de l'Inst. archéol. liégeois*, xiii. (1877) 221.

This is confirmed further, for what it may be worth, by the chronicle of Jean d'Outremeuse.¹ "L'an xi^e LXXIII revient Godefroit, appedain de Huy, à maistre d'orfeivrie, li miedre et li plus experts et subtils ovriers que ons sawist en monde à chel jour, et qui avoit cerchiez toutes regions; si revient à Huy en mois de jule; ilh avoit demoreit bien xxviij ans hors, si avoit eu maintez regions diverses bons ovrages, fietres et altre queilconques ovrage, etc."

The dates here given do not agree with that of 1148 as that of the letter written by Wibald to the "goldsmith G." In that year the latter must have been at home, and an absence of twenty-seven years would make his return take place in the year 1175, not 1173, as Jean d'Outremeuse has it. The probability is that 1174, the year given by Mélar, is the right one for Godefroi's return, which would allow an absence of nearly the necessary time.

The two shrines made by Godefroi for the two saints Mangold and Domitian at Huy still exist, but sadly shorn of their pristine beauty by restorations in the sixteenth century, and even curtailed in actual size. Their principal ornaments are large scale figures of embossed silver, quite different in character from anything in the triptych now in question; but, on the other hand, these figures are identical in style with those on the triptychs in the Church of the Sainte Croix at Liège and in the Dutuit collection in Paris. In both of these, moreover, all the details of the subsidiary decoration are again identical with those of our triptych, the six enamelled medallions of which, again, are identical with those of the wings of the Dutuit triptych. Thus a chain of evidence, independent of the history of the Hanau triptych, tends to confirm its attribution both to Stavelot as its place of origin, and Godefroi de Claire as its maker. Examples of the work of this accomplished artist are to be found both in the British and Victoria and Albert Museums, and a detailed account both of these and of all other pieces ascribed to Godefroi is given in the fine work of Dr. von Falke, where no less than fifteen plates are devoted to him and his school. Among these the shrine of St. Heribert (made about 1155) is one of the most important, and on Falke's plates, 85, 86, and 87, the circular enamelled medallions from it are shown. The resemblance in style between these and the similar medallions on the Hanau triptych is very striking, and lends strong additional confirmation to the attribution of both to Godefroi de Claire. The date of Abbot Wibald's death, 1158, moreover, would point to approximately the same time as the period of the manufacture of the triptych we have now before us.

¹ Ed. Bormans, iv. 457.



LESSER TRIPTYCH, WITH RELIC OF ONE OF THE NAILS, OPEN AND CLOSED. $\frac{1}{1}$

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III.—*The Manor of Eia, or Eye next Westminster.* By WM. LOFTIE RUTTON,
Esq., F.S.A.

Read 20th January, 1910.

IN the days of King Edward the Confessor the Manor of Eye next Westminster, entered as Eia in Domesday Book, was held of Queen Edith by William the Chamberlain. This William, to use the significant words of the record, lost the manor (*manerium amisit*) at the Conquest by William of Normandy, when it fell into the possession of Geoffrey de Manneville or Mandeville (latinized as Magna Villa), who, as perhaps chief of the Conqueror's companions in arms, profited in the acquisition of some 118 English manors, situated in ten counties, chiefly in Essex and Suffolk.¹ This baron by many tenures, about twenty years after the Conquest, being in possession of the Manor of Eye adjoining the estate of the Abbey of Westminster, and no doubt desiring in a measure to atone for his misdeeds, gave the manor to the Abbey. He, in the words of the grant, "for his soul and the soul of Athelays his wife buried in the cloister of Saint Peter, where next to her he also was to be buried, and for the souls of his sons and daughters, gave to Saint Peter of Westminster the manor which near his church he had held, namely Eye, in perpetual heritage," etc. The grant is undated.²

In this grant there is no definite indication of the situation or extent of the manor, and simply from what is known of the Abbey possessions before and after the grant have its location and limits been determined, and laid down on the modern map. Thus Eia is believed to have been the western extension of the estate which lay between the Tyburn stream (A B C) entering the Thames (at A) 200 yards above the position of Vauxhall Bridge, and the Westbourne

¹ Dugdale, *Baronage*, i. 200.

² Eia was in possession of Mandeville at the time of making the Domesday Survey, commenced (as conjectured) in 1086; and as the grant was confirmed by the Conqueror, who died in September, 1087, its date must have been 1086 or 1087. Abbot Gislebert (or Gilbert) Crispin, 1082 (? 1085)–1117, witnessed it.

The name of the manor is printed "Ese" in the *Monasticon Anglicanum*, ed. 1817 (i. 309), and is similarly rendered in the transcript confirmation of the grant, Cotton MS. Faustina A. 111, f. 57^b. But the writer learns from the Dean of Westminster that in the Abbey *Liber Niger* (f. 56) the word is "Eye" in both the grant and confirmation; and that in an older cartulary, the "y", being dubiously written, has apparently by transcribers been incorrectly read as "s".

stream (D E) entering the river at Chelsea (E) near the Royal Hospital, while from south to north the manor extended from the river to the highway now Oxford Street. Within these limits the area computed on the map is 1,090 acres. In Domesday Eia is assessed for ten hides. Half of the manor was in demesne, and as arable land, meadow, and pasture were comprised, it is apparent that a fair proportion of solid, cultivable ground lay above the marsh on the low level bordered by the river. There is, however, no mention of wood as might be expected.

The earliest statement of the western limit of the Abbey estate is that often quoted from the Saxon charter of c. 951.¹ At "Bulinga Fen", which is identified with Tothill Fields, the boundary was said to follow "the old ditch" (A B) running north from the Thames to "Cuford" or Cow Ford, and thence to run up along "Teoburn" or Tyburn to "the wide heere street" or military road, now Oxford Street (C). "The old ditch," which probably had been made for drainage, meeting the Tyburn stream at Cowford (B), eventually became that course of the stream known as the Aye or Tyburn Brook, and later, in its polluted condition, as the King's Scholars' Pond Sewer. Tachbrook Street,² Pimlico, still marks the course. Thus at Cowford (B), which appears to have been where the Tyburn crossed the Chelsea Road near the site of Buckingham Palace, the stream became divided, part running along the road, afterwards James Street, to Westminster Abbey as a mill-stream, part flowing through "the old ditch" into the Thames.

About 1086 the Tyburn stream ceased to limit the Abbey estate, Mandeville's grant of Eye (or Eia) having extended the estate full half a mile westward to the stream we know as the Westbourne. Afterwards, in 1222, it became necessary, in order to settle a dispute between abbot and bishop, to define the limit of the parish of St. Margaret (which is understood to have covered all the homeland of the monastery of Westminster), the monastery and the parish being exempt from the jurisdiction of the See of London. Cardinal Archbishop Langton and other church dignitaries were the arbitrators, and their decree was to the effect that "the Parish of St. Margaret began at the water of Tyburn running into the Thames" (*Incipit igitur Parochia S. Margaretae ab aquâ de Tyburne decurrente in Thamisiâ*).³

Now, as the Tyburn had formed the western limit c. 951, and since that date the Abbey estate (generally assumed to be identical with the parish of St. Margaret) had been extended fully half a mile westward to the Westbourne, a difficulty has arisen as to the interpretation of the decree of 1222, which

¹ Kemble, *Codex Diplomaticus*, iii. 72.

² "Tachbrook" for "The Aye Brook" is suggestive, but is questioned.

³ Wharton, *Hist. de Episcopis*, 252.

seems to re-state "the water of Tyburn" as the western limit. The decree further declares that beyond the stated boundary were the *villae* of Knightsbridge, Westbourne, and Paddington, which pertained to the parish of St. Margaret, and these *villae* lay in sequence immediately beyond the western limit of Eia, as seen on the map. It is also to be said that the Abbey's possession of Eia, recognized by the Norman kings,¹ seems to have had a much firmer basis than that of the more distant lands mentioned. Yet, while these are allowed by the decree to be included in St. Margaret's, it seems that the nearer great manor is excluded.

Mr. George Saunders, Fellow of this Society and of the Royal Society, made in 1833 a careful and complete "Inquiry concerning the situation and extent of Westminster at various periods".² He considered the stated western boundary of c. 951 and 1222 to be identical, that at both times the *Tyburn* was the declared limit. He recognized that after 951 the Manor of Eye had been added to the abbot's estate, but that it had not been included in the "franchise of Westminster", and, therefore, not within the parish of St. Margaret.

On the other hand it has been thought that the terms "aqua de Tyburne" may have referred to the western stream which we know as the Westbourne, and that in earlier times, distinction not being made as later between the two streams coming from kindred sources, both were regarded as Tyburn water.

The greater probability, however, is that Eye, not having been included in the endowment of Edward the Confessor which carried extensive liberties over the lands granted, was not within the franchise of Westminster nor the parish of St. Margaret. It appears to have been accounted a detached portion of St. Martin's-in-the-Fields, even before the positive constitution of that parish, previous to which evidences are found of dispute touching the full authority of the abbot.

It has been assumed and stated that the large Manor of Eye or Eia was, at an indefinite time, divided into the three smaller manors of Neyte, Eybury, and Hyde. But no topographer has attempted to define the limits of these reputed manors, and although there is nominal mention of them, it will be submitted that on close examination their existence as distinct manors is not supported.

The three-manor theory is not very old, dating not earlier than 1833. Lysons, writing in 1795,³ is curiously inaccurate as to the abbot's grant to Henry VIII in 1536, even as to the date, and referring to the "ancient manors of Neyte and Hyde" he offers no explanation in regard to Eybury. The editors of *Monasticon Anglicanum* in 1817 were not more definite than Lysons; indeed, they simply

¹ Besides a copy of the Conqueror's confirmation of the grant in the Abbey *Liber Niger*, f. 56, the same contains, f. 6, that of Henry I, which notes also the confirmation *per breve* of William II.

² *Archaeologia*, xxvi. 223.

³ *Environs*, ii. 113, 181.

repeated him. Sir Henry Ellis, a keen archaeologist, during forty years Secretary of this Society, and twenty-eight years Principal Librarian of the British Museum, wrote in his "Introduction to Domesday Book" (1833) that the Manor of Eia was granted to the king "by the name of Eybury". Thus it is evident that he thought Eia and Eybury synonymous, that Eybury was not merely a division of the great manor but the whole of it. Here, however, he does not mention Neyte and Hyde, and thus avoids the question of divisions. The same year (1833) Mr. Saunders (before quoted) made his "Inquiry", and addressed the "result" to Sir Henry Ellis. He it was that established the three-manor theory. He says: "Eia after the date of Domesday appears to have been divided into the three manors of Neyte, Eubery (*sic*) and Hyde." Mr. Walcott on "Westminster", Mr. Davis on "Knightsbridge", and indeed every writer subsequent to Mr. Saunders, has followed his lead. This question of three manors will have further reference as we proceed.

That the abbots of Westminster had a manor-house at Neyte, a residence apart from the Abbey although in its vicinity, is a well-known, interesting fact. The principal events which occurred at Neyte, viz. the deaths of two of the most notable abbots, Litlington and Islip, and its occupation on two occasions by Plantagenet princes, John of Gaunt, Duke of Lancaster, and Richard, Duke of York, are repeated in all references to the place. Yet no writer, even in our own critical time, has been able to point definitely to the site of the manor-house; it has been a matter of speculation. This oblivion of an historical spot probably results from the neglect of those authors who wrote the local history to mark the situation of the mansion at a time when at least a remnant of it must have been standing, or, if entirely demolished, whilst it was well within the memory of living people. For instance Strype, editing and adding to Stow's *Survey* in 1720, was surely in a position accurately to record the place, yet he seems to have made neither visit nor inquiry, and could only write of the market-gardens which had been laid out in the locality. He has nothing to say about Neyte Manor-house, and leaves it to posterity to puzzle whether "the Neat Houses on the banks of the Thames, inhabited by gardeners" had any connexion with it. Widmore, who came next, was minor canon of the Abbey, and also, as librarian, the keeper of the muniments. Yet, in his *History of the Church of St. Peter* (1751), although he refers to the manor-house he says no more of its situation than that it was "near Westminster"! Lysons, in his *Environs* (1795), is likewise ambiguous, saying merely that "Neyte manor adjoined Knightsbridge". Mr. Mackenzie Walcott, Curate of St. Margaret's, writing his *Memorials of Westminster* (1849), had not discovered the site, although he gave a useful clue to it by quoting reference to the manor in a Close Roll of 28 Henry VIII. Walford, in *Old and New London*, simply copies Walcott. Even Dean Stanley, in his *Historical*

Memoirs of the Abbey (1876), did not help the question of site by indefinitely representing "The Manor of Neyte, as a favourite country-seat of the Abbots by the river-side in Chelsea".

Later writers have not been more precise or earnest in search, and, indeed, the prolonged ignorance appears ridiculous when it is discovered that the site was found by the Ordnance Surveyors and duly marked on the map of large scale (5 feet to the mile) issued in 1872. On that map is clearly indicated "the Site of Neyte Manor-house", but as it is marked only on the large scale map, the omission on the more generally used edition (25.344 ins. to the mile) may serve as some excuse for its remaining unknown. The present writer shares the reproach of having overlooked the Ordnance revelation, which remained hidden until he had successfully finished his quest. Then the laurel of discovery had to be dropped; but there remained at least the value of corroboration, and the satisfaction that the long missing site was determined beyond doubt.

At the Record Office the Close Roll referred to by Walcott proved to be the grant by William Boston, the last abbot (and first dean under his real name, Benson), to the king of the greater part of the Abbey possessions in and near Westminster, and others at a distance. Nominally, the transaction was an exchange for the Priory of Hurley in Berkshire, but virtually this "exchange" of 1536 was the second act of confiscation made by the predatory monarch, who had in 1532 seized, also under semblance of exchange, much of the monastic property for the making of St. James's Park and the completion of the environs of his recently acquired Palace of Whitehall. The third and final act of confiscation was the suppression of the monastery in January, 1540 (n.s.).

At present we are especially interested in Neyte. It is the first item of the grant of 1536; which, although in Latin, we will quote in its English form as incorporated in the Act 28 Henry VIII. Cap. 49 (*Statutes of the Realm*, iii. 709), thus:

All that site, soil, circuit, and precinct of the Manor of Nete within the compass of the moat, with all the housings, buildings, yards, gardens, orchards, fishings, and other commodities in and about the same site.

Here the *situation* of the manor-house is not indicated, but the fact that it stood within a moat serves as a clue for further search. With this in mind a plan is soon found in the Crace Collection, British Museum (Portf. x. 21), the date 1614, showing "Nete House" in an enclosure formed by a moat (fig. 1). The house is built around three sides of a quadrangle open to the road passing in front, where doubtless the moat was bridged. The road which makes a loop to enclose the premises is named "Willow Walk". The plan is a copy of one in the archives of the Grosvenor estate, and it is endorsed: "A Plan of the Manor of *Eybury*." A second plan, dated 1675, is equally satisfactory, and again the title is: "A Map

or Plot of the Lordship of *Eburie*" (fig. 2). Here the moat is gone, but "The Nete House" is indicated, in the "bird's-eye" draughtsmanship of the time, by a little very roughly sketched elevation representing a building, apparently a remnant, terminating in a tower crowned by what may be taken as a broken parapet. As these rude little sketches are probably the only existing indications of Neyte Manor-house they are certainly valuable. And it is submitted that the enlarged facsimiles now reproduced, showing the moat-surrounded house with a central

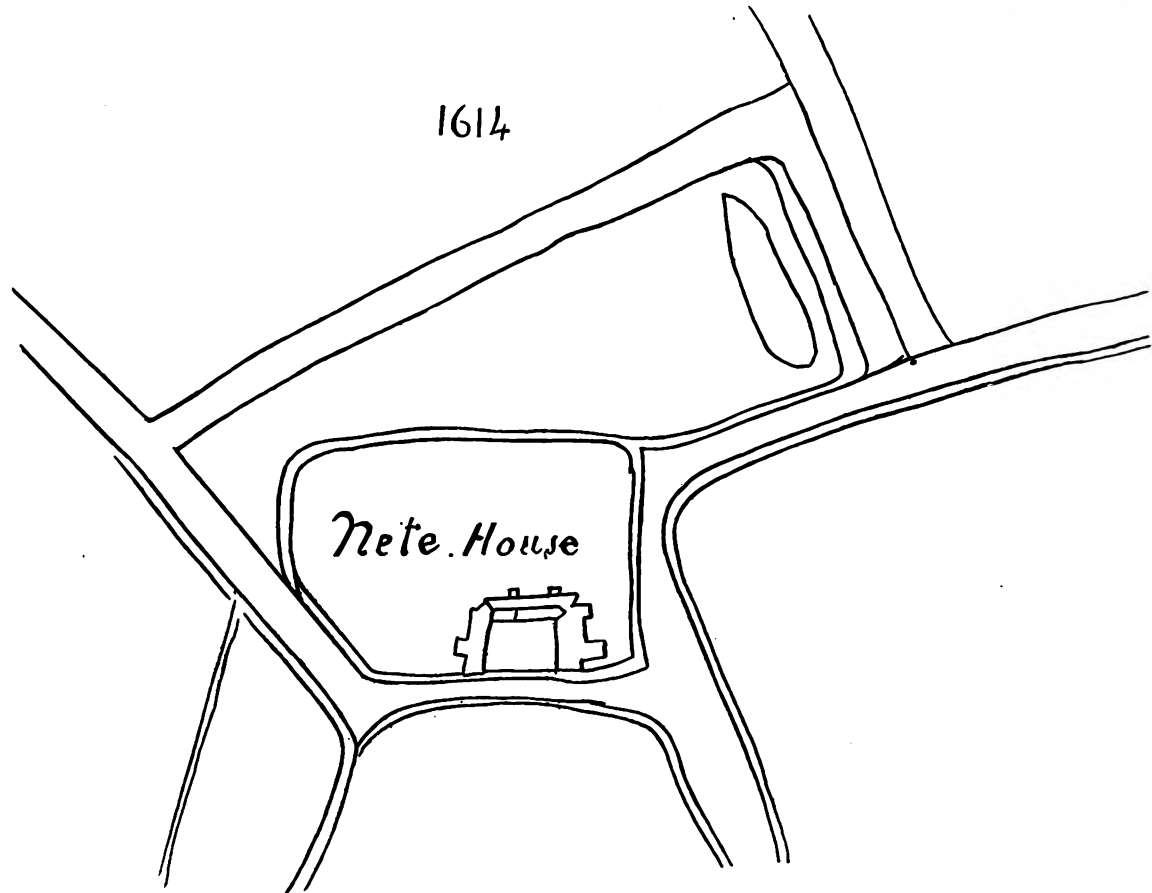


Fig. 1. Rough sketch of Neyte or Nete Manor House in 1614, from the Crace Collection.

court, tower, and broken battlement, fairly represent a mediaeval residence, and as such are convincing evidence of the abbot's house, the object of our search.

Having these traces of the manor-house on the old plans of 1614 and 1675, it is not difficult to find the situation on the modern map. It is a matter of common knowledge that Warwick Street, Pimlico, follows the line of the former Willow Walk; the change of name is to be regretted, though partially it survives in "Willow Street" on the east side of the Vauxhall Bridge Road opposite the point where Warwick Street starts to run westward. The bridge-road marks nearly the western verge of the obliterated Tothill Fields. Along Warwick

Street, about 700 yards from its east end, a street on the south side preserves the loop which once enfolded Neyte House; and Warwick Street, like its forerunner the Willow Walk, was not continued in its direct course until 1869. Then it was driven straight on, and now between it and Sutherland Terrace (late St. George's Row) on the south is enclosed a block of buildings which covers the site we are seeking. It is here that the Ordnance Map of large scale notifies "Site of Neyte Manor House", thus corroborating the result of the search now related.

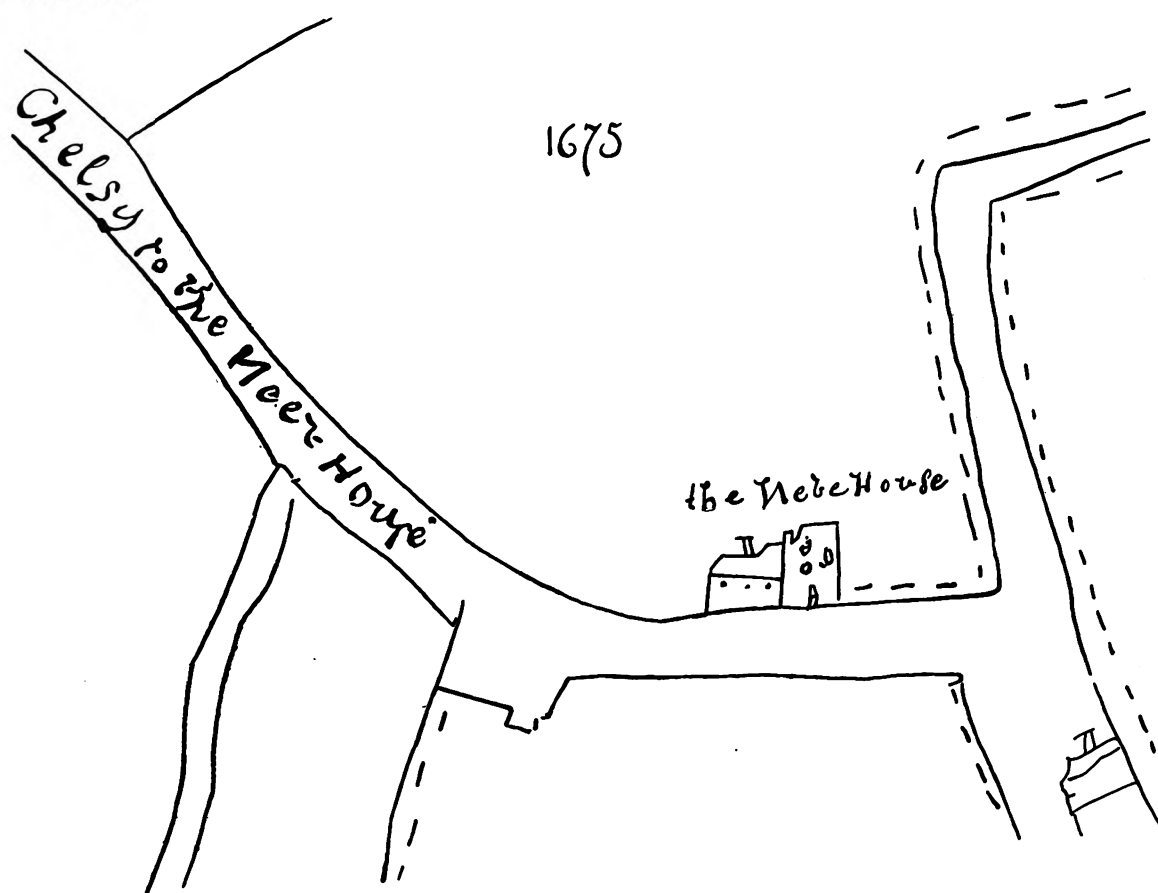


Fig. 2. Rough sketch of Neyte or Nete House in 1675.

Needless to say there is now nothing in these ordinary stuccoed brick houses to remind the passer of the abbot's retreat which once stood there, or of the pleasant gardens which remained long after the monastic brethren had ceased to tend them.¹

¹ Mr. Larwood has perhaps too ingeniously suggested that the name of the public-house, "The Monster," which now occupies the site (and by him said to be the only London tavern with this sign), is a corruption of "Monastery"; "Minster" is also conjectured. The present writer offers on a subsequent page what may possibly appear to be the more probable origin of the name. The house is now modern, but has a standing of at least a century and a half; once famous for its tea-gardens, its present notoriety is that of an omnibus station.

The situation of the manor-house being assured, we will now follow chronologically all that is learnt of its history.

The earliest reference found is in a cartulary of the Abbey under date 5th February, 1314, when Thomas, Vicar of St. Martin's-in-the-Fields, renounced all tithes in Neyte and Eybury.¹ This is the first of those occurrences which seem to indicate the disputed claims of the abbot.² The early history of St. Martin's is obscure; the parish is not supposed to have been constituted until thirty or forty years after the above date; yet here we have mention of a vicar who evidently had claimed tithes in Neyte and Eybury which the abbot had compelled him to renounce. Eventually, however, when St. Martin's parish was authoritatively constituted, about 1361 or a little earlier, Neyte and Eybury were included in it.

The abbot appears to have been temporarily dispossessed in 1320. It is found that at this date the Manor of Neyte was in the hands of the king, a somewhat bewildering fact until later its solution is discovered. At the Record Office, among the Ministers' Accounts, under dates 1320-2, are a number of writs, receipts, indentures, etc. in relation to the business of one Roger de Gretford, who in the documents is variously termed "bailiff of our lord the king at la Neyte", "guardian of our manor of la Neyte", "keeper (*custos*) of the King's manor of la Neyte", "bailiff of la Neyte near Westminster". The transactions relate to cattle which were collected at Neyte, and thence transferred to other places. Now, in the use of the place as a cattle-dépôt or stock-farm in 1320, and probably earlier, we seem to find the origin of its name: "La Neyte," a place for neat, meaning cattle or cows. The suggestion is even stronger in the later form "Neat Houses", equivalent to Cow Houses!³ The name may seem to us strangely inconsonant with the dignity of the manor-house of the abbots of Westminster, yet we know of other English mansions with homely names, and although we may not find "neat" as prefix, its equivalent "cow" heads a score of names in the gazetteer. Indeed, in the same county of Middlesex (parish of Hendon) there is a Cowhouse Manor (Hodsford and Cowhouse) which, moreover, was a possession of the same Abbey.⁴

The perplexing designation of la Neyte as the king's manor happily has its

¹ "Abstract of Charters in a Cartulary of Westminster Abbey in the possession of Samuel Bentley," 1836, Brit. Mus. [The MS. Abstract may perhaps be found at the College of Arms.]

² Even earlier, in 1308, Edward II by letters-patent (see Calendar) "exempted John de Benstede during life, in respect of his dwelling-house in Eye near Westminster, called Rosemont, from livery of stewards, marshals, and other ministers of the king. And at the same time he had licence to crenellate his house." "Rosemont" is suggestive of "Rosamund's land" (and "Rosamond's Pond") enclosed in St. James's Park, but that land seems to have been beyond the limits of Eye.

³ Professor Skeat, *Etymolog. Dict.*: "Neat, black cattle, an ox or cow (E.). *Neet*, both sing. and pl. (M.E.). *Neát*, unchanged in the plural (A.S.)."

⁴ *Monasticon Anglicanum*, ed. 1817, i. 326; Lysons, *Environs*, ed. 1810, ii. pt. i. 395.

explanation in the cartulary before quoted. Dated at Winchester 1st May 18 Edward II. (1325), the king gave an acknowledgement "that he did not hold the manors of Eybury and Neyte unless at the will of the Abbot and Convent of Westminster". And Edward III. in his first regnal year gave up (*liberavit*) "the manor of Eybury which his father had held". Further, at the same time an inventory was made of the goods of the late king at Eybury, and there were found at the place 60 cows and 500 sheep, and also a *columbarium* or pigeon-house. Here, again, we have evidence of the cattle-dépôt.

At the Public Record Office are found other bailiffs' accounts of "la Neyte" for the period during which it was in the hands of Edward II. and Edward III.¹ From these rolls some interesting information can be obtained. The rolls form a series referring undoubtedly to the same manor. The accountant is termed indifferently the "bailiff of the manor of la Neyte", or "la Neyte juxta Westminster",² the "bailiff of the king of his manor of la Neyte with Eyebury" (*de la Neyte cum Eyebury*).³ There was one manorial court, which in 1316-17 was held on Wednesday, the Vigil of SS. Simon and Jude [27th Oct., 1316], and Monday before the Feast of St. Gregory the Pope [7th March, 1316-17]. In 1324-5 this court is called the Court of Eybury. The issues of "the pleas and perquisites" of the court of the manor are returned yearly on the accounts; we find also the return of rents of free tenants and rents and works of customary tenants, showing clearly that "la Neyte" or "la Neyte with Eyebury" was a manor and then formed only one manor. There was a moated house or grange at "la Neyte" at this time, to which King Edward II. seems sometimes to have retired. This house had a hall and an inner hall, a pantry and buttery, the repairs upon which are frequently referred to. On the roll for 1319-20 are items for the cost of the houses within the moat of la Neyte, including nails and iron for a post in the chamber next the king's chamber.⁴ Mention is also made of the garden at "la Neyte".⁵ There was another house or grange at Eybury, probably that later known as Eybury Farm, parcel of the same manor, the repairs upon which are from time to time accounted for.

It is curious to note that fifteen customary tenants of the manors of Staines and Laleham paid a composition in lieu of mowing "le Markedmed" in the Manor of "la Neyte".⁶ The river walls, which were probably of earth, required constant attention, and references to them frequently occur. The theory that the manor was a cattle-dépôt is borne out by these accounts. They show the great stock of cattle kept there and the large household which was maintained

¹ Ministers' Accounts (P. R. O.), Bundle 919, nos. 12 to 24.

² *Ibid.* Rolls, nos. 12, 13, 14, 17.

³ *Ibid.* Rolls, nos. 19, 20.

⁴ *Ibid.* Roll no. 17.

⁵ *Ibid.* Roll no. 13.

⁶ *Ibid.*

to look after it. Although much of the land was given up to pasture, as is to be expected in the low-lying district near to the Thames, yet there was a good deal of arable land, probably in the northern part of the manor, where the land rises.

Among the place-names occurring within the manor are the following: Twantiacres (Twenty Acres hereafter referred to), Pourtelane, arable land at Rodeland, Mabelycroft, and Wyndmellehul (Windmill Hill), la Loggemed, the wall from Mareflete to Abbotesbregge, pasture at Knytbrugg (Knightsbridge), Gosepole (Goosepool), and Markyngmed. The Tybourne is constantly mentioned, and [river] wall, garden, &c., at Burgoyne, possibly the same as Bulinga Fen, which has been identified with Tothill Fields.

Perhaps the most interesting reference to a place-name on these rolls is one that occurs on the roll for 1316-17: "Of 16s. 11d. from Thomas Chese and Gille (*Egidia*) his wife of the farm of 29 acres of land at Osolveston leased to them for term of their lives."¹ Osolveston is the old form of Osulveston,² the hundred in which a large district outside London is situated. Mr. Reginald A. Smith, F.S.A., states³ that at the presumed point of intersection of a road from Notting Hill "with Watling Street south of the Marble Arch once existed a Roman geometric stone". A stone similar to London Stone for long existed here, and was to be seen in 1822 a few yards south of Cumberland Gate, but was covered up in that year and was perhaps dug up when the Marble Arch was erected. This stone is said to have been known as Ossulstone, and at such a landmark we should expect the hundred court to have been held, thus giving rise to the name of the hundred. This spot would be within the Manor of "la Neyte" with Eybury.

The disputes as to jurisdiction had not been settled by 1344, when a murder having been committed by a tenant of land in "Eye by Westminster", the king granted the escheated lands to his barber-surgeon. The culprit, however, "was indicted before the coroner of the liberty of the Abbot of Westminster, taken by the Abbot's bailiffs, arraigned before them in the Abbot's Court, and there adjudged to be hanged." Whereupon the abbot entered upon the lands and held them as his escheats. The king claiming the same, a commission was appointed to make inquisition; but the judgement is not discovered.⁴ Probably this was the last dispute of the kind, for soon afterwards (between 1345 and 1361, says Mr. Saunders) the parish of St. Martin-in-the-Fields was constituted, and the abbot's Manor of Eye or Eia forming part of the parish may have been henceforth included within the franchise of Westminster.⁵

¹ Ministers' Accounts (P. R. O.), Roll no. 14.

² *Feudal Aids*, iii. 383.

³ *Victoria County History*, London, i. 32.

⁴ *Cal. Patent Rolls*, 1344, pp. 238, 297, 321.

⁵ Such is Mr. Saunders's solution of an obscure and tangled matter. He says also: "In 1393 a

"La Neyte," having been for some years in the king's hands, returned to the abbot in 1327; and there are signs of his living at the manor-house in Widmore's record (p. 89) that in 1338 Abbot Henley "remitted to the Convent nine dishes of meat, six conventual loaves, and three flagons of beer, which they used to furnish daily for the abbot's table when he was at Westminster or the manor-house of Neyte". In 1362 Nicholas Litlington, the renowned building abbot, succeeded Langham, then made Bishop of Ely, afterwards Archbishop of Canterbury, and eventually Cardinal. Very fortunately the new abbot's constructive talent was encouraged and enabled by the riches, amounting in modern value, it is said, to £200,000, bequeathed by his predecessor for the purposes of the Abbey. The west and south walks of the cloister, the abbot's house (now the Deanery) with its accessories "the Jerusalem" and other chambers, the great dining-hall and kitchen, still witness to the work of Litlington. Even as prior his building ability had been exercised, for Widmore relates (p. 102) that in the January before his election as abbot "a high wind had blown down most, if not all, of the Abbot's manor-houses, and that these he rebuilt within three years, and better than they were before". This closely touches our subject, for we may fairly suppose that the house at Neyte was at this time rebuilt by Litlington in style and capacity befitting the dignity of the abbots, and even on a scale as not long afterwards to attract the eye of princes seeking habitation. The name, however, "la Neyte" or "Neet House" was not changed, its old association with cattle remained.

The distance was but a direct mile from the Abbey, yet it was sufficient to ensure the abbot's peace whilst temporarily retired from the governing charge of the monastery. The situation, however, being remote and solitary, my lord's retinue was required to be of sufficient strength to deter marauding attack; his only neighbours at Neyte were the tenants of Eybury Farm, scarcely 300 yards distant to the north-west. The direct way from the Abbey to Neyte would be across the desolate Tothill Fields to their western verge marked by the Eye stream, *i.e.* the Aye or Tybourn Brook. That stream would be crossed by "the Abbot's Bridge", and the marsh thence to the moated manor-house would be traversed by "the Willow Walk", the willow-bordered causeway raised slightly above the general level. The marshy condition of the stretch of land, about half a mile in width, lying between the causeway and the Thames can be judged by the large fields and intersecting drains seen on the map of 1614; and that the Willow Walk was a causeway appears in the name "Cawsey Haw" given to a piece of ground adjoining it. The abbot's usual way, however, would probably be somewhat circuitously by Tothill Street, Petty France, and

charter was obtained from Richard II, which is enrolled in the Exchequer [probably now at the Record Office], and affirms that the abbot in right of his monastery was seised of the Manor of Westminster in the town of Westminster, and in the parish of St. Martin-in-the-Fields." *Archaeologia*, xxvi. 236-9.

the road which became James Street as far as its meeting with the Chelsea Road, at which point the stream was again crossed by the Eye Bridge. Here was probably a small hamlet clustered about the Eye Cross, the "Cuford" mentioned in Abbey documents, the Cowford of Saxon times. Buckingham Palace nearly occupies the situation. At Eye Bridge the abbot and his company would turn south-west and follow the Chelsea Road about three-quarters of a mile to "Eybury" (or Eybury Farm, its later name), immediately after passing which a by-road to the left led to Neyte Manor-house. Another route, easier to travel by than the rough roads of the time, would be the smooth and "silent highway" of the Thames, and my lord abbot, with his attendant brethren, taking his barge at Westminster would be rowed up the river to a landing-place opposite Neyte, and then on his mule or on foot traverse the five hundred yards of meadow which lay between the river and the manor-house.

We may assume that the house after its probable destruction by storm had been rebuilt by Litlington in commodious and even stately fashion, and that he often resided in it during the twenty-four years of his abbacy. Obviously it was convenient during the rebuilding of the abbot's house at Westminster. At Neyte he closed his life, the 29th November, 1386; his body was carried to the Abbey for interment, but the obsequies are not found recorded as in the case of a successor a century and a half later.

Three years after Litlington's death John of Gaunt, Duke of Lancaster, and self-styled King of Castile, was returning from his fruitless pursuit of a crown, yet using the empty title in virtue of his wife's claim. His Savoy palace had been destroyed by Wat Tyler's rebels eight years previously, and being, as he wrote, yet destitute of a dwelling convenient to the Parliament to which he had been summoned, he besought the abbot, William of Colchester, for the temporary use of Neyte Manor-house. His letter making this request is fortunately preserved with the Abbey muniments; its interest is not lessened by its quaint old French and dubious orthography:

Depar le Roy de Castille et de Leon, Duc de Lancastre. Tres cher en Dieu, et nostre tres bien ame. Nous vous salvons tres sovent, et porce que nous sumes comandez par nostre tres redoute seigneur le Roy pour venir a cest son prochain Parlement a Westminster, et que nous y duissions estre en propre person, toutes autres choses lessees en eide et secour del roialme Dengleterre, et sumes unqore destitut de lieu convenable pour nous et nostre houstell pour le dit Parlement, nous prions tres chèrement et de cuer, que vous nous veuillez suffrer bonement pour avoir vostre manoir del Neyt pour la demoere de nous et de nostre dit houstel durant le Parlement susdit. En quele chose faisant tres cher en Dieu et nostre tres bien ame vous nous ferrez bien graunt ease et plesaunce, paront¹ nous vous voloms especialment bon gree savoir et par tant faire autre foiz pour

¹ pront = paront [?].

vous et a vostre request chose agreable de reson. Et nostre seigneur Dieux vous eit touz jours en sa tres seinte garde.

Donne souz nostre prive seal a Narbourne le xxvii jour de Septembre [1389].

[Endorsed] A nostre tres cher en Dieu et tres bien ame labbe de Westmonster.¹

It is presumed that the Duke's wishes were met, as refusal would scarcely have been salutary.

Half a century after John of Gaunt's death there was another royal occupation of Neyte, it being on record that the Duchess Cecily (Nevill), wife of Richard, Duke of York, the White Rose leader (great-nephew of John of Gaunt), here in November, 1448, gave birth to John their fifth son, who died young.²

We find also that the unfortunate Dame Alianore Cobham (Duchess of Gloucester), persecuted on a charge of sorcery and witchcraft, was detained at Neyte three days before final banishment to the Isle of Man; this in January, 1443 (n.s.).³

A lease of the Manor of Eybury was granted by Abbot John Islip in 1518. In this he conveyed to Richard Whasshe for a term of thirty-two years

the Manor of Eybury with all lands and appurtenances excepting certain closes called the "Twenty Acres", *lying opposite* the Manor of Neyte on the south, and "the Abbot's Mead", with a pasture called "le Calsehaw" (Causeway Haw), *lying off* the eastern part of the said Manor of Neyte. The annual rent was £21, and there were several obligations. Eighteen cartloads of good hay were to be cut and carried into the Manor of Neyte for the Abbot's use, part at the tenant's expense, part at a fixed price. At Christmas a boar worth ten shillings was to be provided. All fuel required for the Abbot's use was to be got and carried from the Thames bank to the Manor of Neyte at one penny per cartload. A weekly cartload of necessities for the hospitality of the Abbot. The transport of goods from the Manor of Neyte to those of Hendon and Laleham. The repair of all buildings and sheep-folds. The tenant to have wood from the Manor of Eybury required as "heybote, ploughbote, cartebote and fyerbote", but all loppings of trees growing on the reserved land and in the Manor of Neyte are excepted for the Abbot's use. The tenant is prohibited from conceding the manor and other premises to any person without consent of the Abbot. The Abbot has power in case of failure of rent, or delivery of the boar or the hay, to distrain for same after forty days. The lease was given at the Chapter House of the Abbot and Convent at Westminster, the sixteenth day of in the eighteenth year of the reign of King Henry VIII.⁴ (See Appendix I.)

One other event only is there to notice: the death at Neyte of Abbot John Islip in 1532. He was virtually the last of the abbots, for his successor, William

¹ The letter of John of Gaunt is exhibited in the Chapter-house of the Abbey. As transcribed by Joseph Burt, Assistant Keeper of the Public Records, it is printed in *Archaeological Journal*, xxix. 144.

² William of Worcester, *Liber Niger*, ed. Hearne, 1728, ii. 424, 526.

³ *The Brut, or Chronicles of England*, pt. ii. 482; Early English Text Soc., 1908.

⁴ "Conventual Leases," No. 53. For the discovery of this and other papers, and for much kind assistance, the writer is greatly indebted to Mr. Salisbury of the Public Record Office.

Boston or Benson, who made the surrender and became dean, is scarcely allowed on the roll. Islip had governed the monastery thirty-two years, and his ability and energy had been exercised on the fabric of the noble church. At the eastern end the chapel of Henry VII. had been completed under his supervision; the western end had also been finished, the exterior niches filled with statuary, and the towers raised to a height a little above the eaves of the nave;¹ communication between the abbot's house and the church was made by a passage terminating in the small gallery yet seen overlooking the nave at its south-west end; and finally the Islip chapel was built for the abbot's sepulchre. In the first years of his abbacy, during the reign of the religious-minded Henry VII., he had witnessed the abbey in the full dignity of ceremony and authority; and he had lived to see the time of abasement and spoliation. In the year of his death (1532) the greed of Henry VIII. had already deprived the Abbey of much property in its immediate vicinity, viz. land and houses for the making of St. James's Park and the completion of Whitehall; and this, done under the pretence of exchange, was but the prelude of further and entire confiscation. So it was no wonder that this calamity having befallen him, and foreseeing more, the poor abbot, like King Hezekiah in misfortune, became sick unto death, much needing the consolations of his faith as materially depicted in the beautiful obituary roll which has fortunately come down to us. He died "at Neyt beside Westminster, the 12 day of May, being Sunday, about four or five of the clock in the afternoon, the twenty-fourth year of King Henry VIII."

The record of his obsequies, deposited at the College of Arms, is exceedingly interesting. We are admitted into Neyte Manor-house, where, in the large parlour hung with black cloth and the escutcheons of the abbot and monastery, was set the chest containing the cered body of the deceased covered with a rich pall of cloth of gold tissue. By it four great tapers burned day and night; around were the constant mourners and watchers, and from time to time masses for the dead were recited. There the body lay four whole days, and on Thursday about two of the clock came the fathers of the house, with the monks, and the Abbot of Bury St. Edmunds in pontifical vestments. And the appointed offices having occupied an hour, about three o'clock the long procession set out for Westminster. First were two conductors with black staves to keep back the people who lined the way. Then in succession came the cross-bearer, four orders of friars from Canterbury, brotherhoods of priests and clerks of the pope, the clergy of St. Martin's and St. Margaret's, the Abbot of Bury *in pontificalibus* with his assistants in goodly rich copes, gentlemen gowned and hooded in black, Richmond and Lancaster heralds in their tabards of the king's arms. Preceding the coffin came twenty-four poor men, habited in black

¹ Thus indicated in Dart's *Westminster Abbey*.

gowns and hoods and bearing torches. The coffin was borne by six yeomen of the deceased, and other six relieved them. The banner of Our Lady was carried, and surpliced priests bore branches of white wax. Twelve yeomen carrying staff-torches were about the corpse, and immediately after followed the Lord Windsor as chief mourner, with six others, two and two. Then more gentlemen, and the yeomen and farmers of the deceased abbot, all habited in black. Lastly, men and women of Westminster and other places ended a procession so long that "the trayne was from Neyt until Toutell Street", a full mile.

Arrived at the Abbey the body was received by the Abbot of Bury and his assistants and carried into the quire, where it was set under a goodly hearse "with many lights and majesty"; and the mourners took their places. Then the *Dirige* was solemnly sung by the monastic brethren, and after other ceremonials were completed the mourners proceeded to a chamber over the chapel of the deceased, where they partook of "spiced bread, sacket, marmylate, spiced plate, and divers sorts of wine in plenty". And during the funeral feast "they of the church did bury the deceased in the chapel of his building, which was hung with black cloth garnished with escutcheons, and over his sepulchre a pall of black velvet, and two candlesticks with angels of silver and gilt, with two tapers thereon, and four about the corpse burning still". Thus in solemn state was buried the virtually last of the Westminster abbots.¹

Four years after Islip's death the king, whose rapacity had fed and grown on his first spoils, again seized, under legal semblance of exchange, grant, and Act of Parliament, all the property of the Abbey beyond its immediate precincts. Boston's grant of 1536 follows as Appendix II to this paper; at present we will trace the fate of Neyte Manor-house, then surrendered with the rest. It seems to have remained in the king's hands until his death, soon after which it was given, in 1547,² by the boy-king Edward VI. or his Council, to Sir Anthony Browne, K.G., one of the magnates of the time grown rich on monastic spoils. He had already Battle Abbey, Cowdray, and much else, and may have coveted Neyte as a residence near to Court; but he did not long retain it, for death claimed him the year after his latest acquisition. Less than half a century later Neyte, having reverted to the Crown, is found, with 108 acres of land attached, in the tenancy of farmers, by name Linde and Turner, who are heard of because of complaint brought against them before Lord Burghley, the queen's high steward, on the ground that the 108 acres being mostly Lammas land (*i.e.* common during Lammastide) they had enclosed and divided it with

¹ The account of the funeral is fully quoted in *Monasticon Anglicanum*, ed. 1817, i. 278, and, with facsimile reproductions of the Obituary Roll, in *Vetusta Monumenta*, iv and vii.

² Roll 1 Ed. VI, pt. i, mem. 15.

new hedges.¹ This was in 1592; the tenant of the neighbouring and much larger Eybury Farm was similarly arraigned, but the judgement does not appear.

In 1614 the old manor-house, to judge from the plan we have noticed, appears to have stood intact within its moat. A few years later it had become a place of entertainment for strolling Londoners, which character it maintained until its extinction. Curiously, information to this effect (directly derived from Mr. Wheatley's *London*) is contained in a play of the time. For in Philip Massinger's *City Madam*, licensed 1632, is extolled "The Neat House for musk-mellons and the gardens where we traffic for asparagus" (Act III, sc. i). The abbot and his monks had left a fruitful garden here, the forerunner of the "Neat House Gardens" which eventually covered the whole area between the Willow Walk and the Thames; and as the gardeners required houses "Neyt, or Neat House" became expanded into "Neat Houses" as the name of the locality.

Next we have our friend Pepys here, and he, ever seeking enjoyment, finds it five times during the years 1661-1668 at the "Neat Houses". He it is who first writes the name in the plural (Massinger gave it in the singular), and from the entries in his *Diary* it is evident that other dwellings had sprung up, and that his visits were not limited to one spot. The first recorded visit is in 1661. He had taken coach to Chelsea to see the lord privy seal on business, and by some mischance, the coach not having waited, he with his companion had to walk back to Westminster. So taking the Chelsea Road they by and by "came among some trees near the Neat Houses"; the spot was probably where the by-road led off to the manor-house. Here some whistling "gave them suspicion", perhaps an idea of highwaymen; but it was only the signal of a friend, who joined them in their walk. Once he takes boat and goes by river to "the Neat Houses over against Fox Hall (Vauxhall)" to see a man dive; that of course was some distance from the manor-house. Another time coming down the river from Barnes Elms he lands to buy a melon, doubtless of the kind that the dramatist had appreciated. And once in convivial mood after the play, he with his wife and Mistress Knipp "went abroad by coach to the Neat Houses in the way to Chelsea, and there in a box in a tree (*sic*) they sat, and sang, and talked, and eat"; but the rose was not without a thorn to poor Mistress Pepys, who, he adds, was "out of humour, as she always is when this woman [Knipp] is by". This time at least the place seems to have been the monks' old garden, the manor-house, or a remnant of it, probably still standing. Pepys's last mention is in May, 1668, when he "met Mercer and Gayet and took them by water first to one of the Neat Houses, where they walked in the gardens, but [finding] nothing but a bottle of wine to be had, they, though pleased with the gardens,

¹ Strype, ed. Stow's *Survey*, bk. vi. 78.

went to Vauxhall, where with great pleasure they walked; and then to the upper end of the further retired walk, where they sat and sang, and brought a great many gallants and fine people about them, and upon the bench they did by and by eat and drink and were very merry". Such were the relaxations of the distinguished public servant, Mr. Pepys.

One of the Neat Houses of entertainment was kept by old Mistress Gwynn, mother of Nell, the king's favourite. Her untimely end is all we learn of her; it is recorded in two of the journals preserved, and thus in *The Domestic Intelligencer* of 5th August, 1679: "We hear that Madam Ellen Gwin's mother sitting lately near the waterside at her house by the Neat Houses, near Chelsea, fell accidentally into the water, and was drowned." Two printed sheets of the day now found in the King's Library, British Museum, satirically relate the occurrence. One is a metrical "Elegy upon the never to be forgotten matron Old Madam Gwinn who was unfortunately drowned in her own fishpond on the 29th of July 1679". The other is a prose account, equally satirical and unflattering to the reputation of the poor woman, whose death is attributed as much to brandy as to water.

The plan of 1675, from which we have taken the rough indication of Nete House in elevation, shows that at this time it, and the two large fields always attached, were owned by "Edward Peck, Esq." The owner of the neighbouring Eybury Farm was Mistress Mary Davies¹, a child-heiress of ten years old, whose marriage the next year with Sir Thomas Grosvenor led to the formation of the great Grosvenor Estate. That estate was gradually extended over all the land between the Willow Walk and the Thames, excepting Nete House and the two large fields above mentioned. This extension is clearly evident in an excellent plan of 1723, made expressly to show the then extent of the Grosvenor property. To avoid reduction of scale that portion only is now reproduced in which we are expressly interested.

The figures distinguish the several parcels, etc. enumerated in the abbot's grant of 1536, and correspond with those in the list given as Appendix II to this paper. No. 1 is the parcel containing Neyte Manor-house, which, or part of which, may have remained as late as 1723, the date of the plan. No. 2 is the field called "the Twenty Acres". No. 3 (here divided) is "the Abbot's Meadow". These two fields were always attached to the manor-house² (we observe "Balywick of Neat" written on No. 2), and they, with No. 1, did not belong to Grosvenor in 1723, but to a Mr. Stanley.³ No. 4 (marked "Eybury

¹ "Dammison" on the plan is presumed to be a mistake for Davies.

² These fields, nos. 1, 2, 3, are shaded on the plan.

³ Probably of that branch of the Stanley family sometime seated at Stanley House, Chelsea. See Lysons, *Environs*, ii. 124. "Stanley Place" is now found close to the site of Neyte Manor-house.

48 THE MANOR OF EIA, OR EYE NEXT WESTMINSTER

Manor") is the Eybury Farm lying a little to the north-west of Neyte. The vicarage and schools of St. Michael's (Chester Square), and Ebury Square close by, now cover the ground ; but the actual site of the farm-house was along the road on the north-east side of the modern church of St. Philip.



Fig 3. South portion of the Manor, from a map of 1723.

The causeway called "the Willow Walk" stretches on the map over the marsh between Tothill Fields and the manor-house, on reaching which a loop is made around the premises ; the loop is still apparent, though Warwick Street, which has taken the place of the Willow Walk, is now continued westward. The Eye stream, No. 10, was crossed by "the Abbot's Bridge".

In a plan of 1727 the house is gone, and the ground vacant on which it had stood, though still belonging to Mr. Stanley. The Chelsea Waterworks had had their beginning in 1722, a canal cut the by-road between Nete House and Eybury Farm, and "Chelsea Bridge", a wooden structure, now formed the connexion.

On Rocque's maps of 1746 "The Neat Houses", a group of disconnected buildings, occupy the site.

A few years later gardens were opened here which went by the curious name "Jenny's Whim". Of Jenny nothing is known but her "Whim", which seems to have consisted of fantastically laid out gardens, where, at certain spots, the unsuspecting visitor treading on a spring would be startled by the sudden appearance of a figure, angel or monster, confronting him. These gardens were for some time fashionable, and visited even by such exquisites as Horace Walpole; but before their extinction, towards the end of the century, they had become disreputable. Their successor was "The Monster" and its tea-gardens (see footnote, *ante*), for which it is now suggested that one of Jenny's monster figures may originally have served as the sign.¹

Of the manor-house there is nothing more to relate; its very site passed out of knowledge. As has been said, at the critical period of its demolition it was unrecorded by Strype, who, in 1720, only noticed the luxuriant market-gardens of the Neat Houses which supplied London and Westminster with "*Asparagus, Artichokes, Cauliflowers, Musmelons*, and the like useful Things that the Earth produceth". The gardens flourished more than a hundred years later. On Cary's fine map of 1819 they are represented in full development, but in 1834 they are diminished, and streets are being laid out. Not, however, until 1840 were the gardens quite obliterated, and their area overspread by the rising streets of Pimlico. The Willow Walk had become Warwick Street about 1844, though not until 1869 was that street driven straight on towards the bridge over the railway and canal, the loop continuing as of old to enfold the site of Neyte Manor-house.

The great Manor of Eye or Eybury was intersected by Knightsbridge highway, north of which lay about 482 acres, south of it about 608 acres. Of the northern moiety Hyde occupied about 320 acres, and the remainder included, as we learn in the abbot's grant of 1536 (Appendix II), "a great close belonging unto Eybury," supposed to be now represented by Grosvenor Square, and the Brick Close, lying west of the Conduit Mede, which is well known to have lain along Bond Street. Further north, along the Oxford highway, were various

¹ Walford, in *Old and New London* (v. 45), quotes all that is recorded of "Jenny's Whim", and he reproduces from the Crace Collection a view in 1750 of Jenny's Whim Bridge; the wooden bridge over the canal was for a time so called. "The Monster" in 1820 is also represented.

Eybury tenancies, the holders of which had to be compensated for damage when the Corporation of London in 1439 were permitted by the abbot to lay pipes for conducting water from the Paddington springs.

The southern moiety of Eybury, the 608 acres, appears to have been divided even before the forced surrender of 1536. We do not learn what extent of Eybury Richard Whasshe had by his lease of 1518, though from the exemptions of the great fields, the Twenty Acres and the Abbot's Meadow adjoining Neyte Manor-house, we surmise that the tenant had the remainder of the land lying north of the river. When, however, in the deed of 1536 we read of "the Manor of Eybury", said to have been in the tenure of Richard Whasshe, we

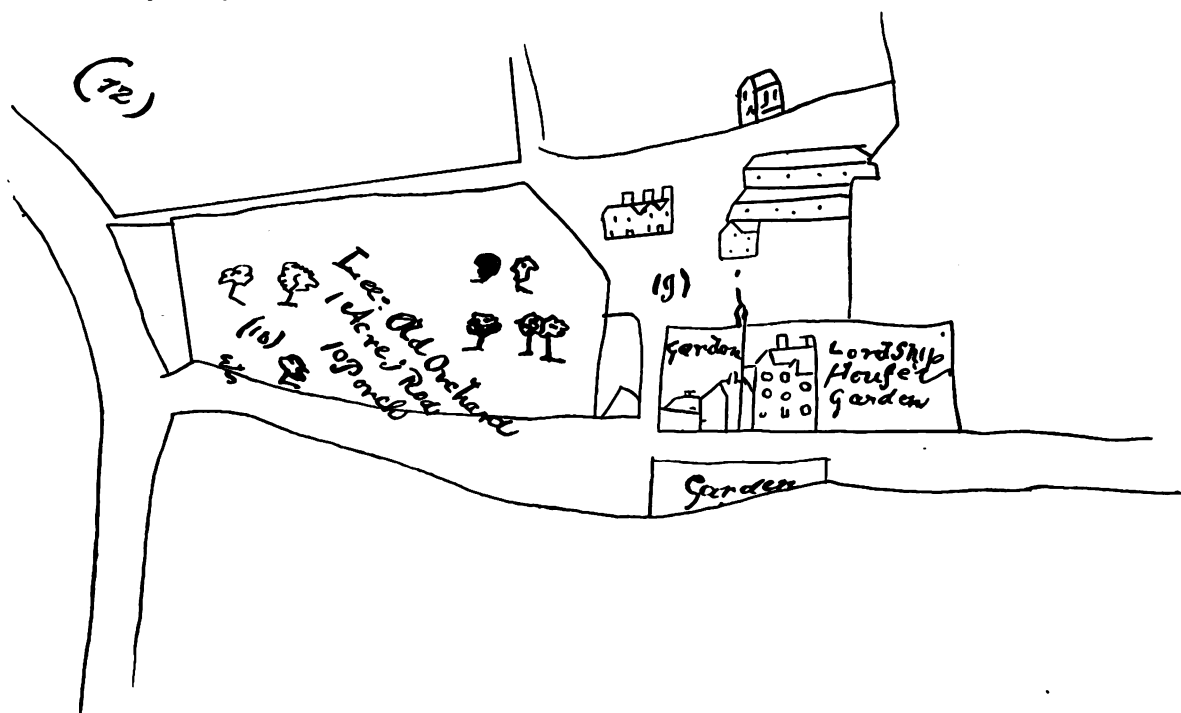


Fig. 4. Ebury Farm, or Lordship House, 1675. The road which passes the house is now Buckingham Palace Road, and that on the left hand Pimlico Road.

conceive that reference is intended to Eybury Farm. Half a century later we have further information regarding this farm. In 1592 the name of Queen Elizabeth's tenant is still Whasshe, though probably son of the former tenant. He had 430 acres of meadow and pasture, perhaps arable land besides. Also a large portion of ancient Eybury had been taken to form a distinct farm of Neyte, which, as before noticed, contained 108 acres.

The farmstead of Eybury or Ebury lay along the Chelsea Road, scarcely 300 yards north-west of Neyte House. On the plan of 1614, in a square enclosure, some buildings surround one of modest size probably representing the dwelling-house. It is simply designated "Eybury", and thus named in the midst

of the manor it may be thought to have originally represented its "bury" or manor-seat afterwards transferred to Neyte. Sixty-one years having elapsed we have it again in the plan of 1675, a portion of which is now reproduced.

The house appears to have been rebuilt, and, if we may trust the little roughly sketched elevation with three tiers of windows, it has now the importance of three stories. It stands by the roadside with garden attached, and against it is written, "Lordship House and Garden." This probably was the residence of Alexander Davies, the father of the heiress who, as already noticed, brought the estate to the Grosvenors, for on his tomb in St. Margaret's churchyard Davies (or Davis) is described as "of Ebury". The descent of the farm from Whasshe to Davies has not been traced. The latter had died in 1665, and, his widow having remarried, the child-heiress at the date of our plan was probably living with her relations, the farm having as tenant the Edward Boynton named in the table. The next year (1676) little Mary Davies, at the age of eleven, became the wife of Sir Thomas Grosvenor, Baronet, of Eaton in Cheshire. The estate grew, and its extent almost half a century after the marriage has had our attention as shown by the reproduced map of 1723. At that time the stated owner was "Dame Mary Grosvenor", widow of Sir Thomas (who had died in 1700), but she was then mentally deranged, and her son, Sir Richard, was virtually proprietor. It is not learnt that he occupied "Lordship House", Ebury, but it was not until three years after his death (in 1732) that Peterborough House, Millbank, became the family seat.

The farmstead stood intact in 1746, when Rocque miswrote it on his map as "Avery Farm", a mistake which has been perpetuated. But London was drawing nigh, there had been building at adjacent Neyte, and Jenny's Whim public gardens were soon to attract the town-folk. Bowles, in 1787, showed that the farm had been obliterated; the new houses of "Bridge Row" occupy the site. Horwood, in 1795, showed "Avery Farm Row" and other rows, while the Chelsea Road at this place had become "Belgrave Place", a name of true London import. To-day the site of the farm is a busy commercial quarter, curiously retaining both the name Ebury and Avery its corrupted form. A chief factor in the change has been the Brighton Railway, which has taken the course of the Grosvenor Canal, obliterating it; and a modern great iron viaduct now serves the wide thoroughfare where formerly Jenny's Whim frail wooden bridge sufficed. There is now nothing of the picturesque in the noisy sterile streets, but something has been done to relieve monotony by the planting of trees around the vicarage and schools of St. Michael's (Chester Square), which occupy the site of the old farm; while, close by, little and unfashionable Ebury Square preserves the name and an open garden-space, with a fountain and tree-shaded seats for weary Londoners.

The origin of Hyde, which appears to have been a sub-manor of Eia or Eyebury, is undiscovered. Its boundaries are those of Eia on the north and west, namely the Uxbridge Road and the Westbourne stream now merged in the Serpentine; the old course of Watling Street, preserved in Park Lane, lies on the east, and the Knightsbridge Road on the south. Thus it forms roughly a quadrilateral taken out of Eia at its north-west angle, and its identity has been preserved in Hyde Park, which, however, was made to extend far beyond the western limit of the manor, and covering part of Knightsbridge and Westbourne, originally reached almost to Kensington Palace.

In the Feet of Fines for Middlesex¹ there are several mentions of "la Hyde" as the cognomen of tenants: thus "Geoffrey de la Hyde" in 1256. It is also met with in the cartulary before cited purely as a land name. We are safe, therefore, in the belief that at an early time the district was known as "la Hyde". And in the absence of fact we may conjecture that the origin is implied in the meaning of the word. In the course of years the area would be extended, yet the original name, "The Hyde," might have been retained until the time when it comes under our cognizance, with an area of about 320 acres.

Of incidents beyond legal transactions during monastic times we have scarcely any. Widmore discovered that Abbot Litlington (1362-1386) improved the estate of the Convent at Hyde, and we have already referred to the jealous care with which Abbot Harweden (1420-1440), when granting to the City of London springs at Paddington, and permission to lay conducting pipes through Paddington and Eybury, prohibited any intrusion into "the Manor of Hyde". There was "the ancient supply of water to the Abbey of Westminster", and any interference with it would be met by the resumption of the Paddington springs.²

When Hyde was seized by the king in 1536 it was thus described in the Act:

The site, soil, circuit and precinct of the Manor of Hyde, with all the demesne lands, tenements, rents, meadows, and pastures of the said manor, with all other profits and commodities to the same pertaining, which be now in the tenure and occupation of one John Arnold.

Thus the abbot had his yeoman-tenant at Hyde as at Eybury. We should like to know more; whether John Arnold had the whole manor, which contained,

¹ *Calendar to the Feet of Fines of London and Middlesex*, by W. J. Hardy and W. Page.

² Rymer, *Foedera*, ed. 1710, xi. 29-32. Mr. A. Morley Davies, in an excellent study of "London's First Conduit System" (*Transactions of the London and Middlesex Archaeological Society*, 1907), shows by an authentic diagram the course of the conduit of 1439. Crossing the highway where is now the Marble Arch, the corner of Hyde Manor is avoided, and the conduit is laid in the land along the south side of the highway now Oxford Street. As evidence of the extension of the Manor of Eybury to the highway it is interesting to notice in the Agreement of 1439 that it was to the abbot's tenants of Eybury, as well as to those of Paddington, that compensation had to be paid.

as has been said, about 320 acres, and of what they consisted. The term "messuage" is absent (as it was in the Eybury grant), and perhaps in "tenements" we scarcely imagine a manor-house, though "demesne lands" may imply a residence of some importance. There were meadows and pastures of course, but there is no specific mention of woods, springs, or the pools heard of when the park was sold in Commonwealth times. That, however, was more than a century after bluff Henry had laid wide his hunting-ground, and built his lodges and banqueting-house. With that transformation we are not now concerned; it is the history of Hyde Park which has had many writers. We hope for further knowledge of Hyde when the complete arrangement of the Abbey muniments, now progressing, has been accomplished.

In concluding this paper, it is the hope of the writer that in presenting previously known facts with those discovered by recent search, an account of the district, fuller and more accurate than previous accounts, has been rendered. He would venture to think that something has been done in dispersing the erroneous theory of three manors, Neyte, Eybury, and Hyde, and in ending the fruitless search for a distinct manor of Neyte by showing that the name of the Abbot's seat was applied to the one manor, the ancient "Eye next Westminster" or in its developed form Eybury; so that "Neyte cum Eybury", with the sub-manor Hyde, may serve as a frame into which may be fitted the further details yet to appear as search is continued.¹

¹ The view that the word manor in the case of Neyte had no more than the significance of mansion, or as in French "manoir", which was advanced by the writer when reading this paper, is now withdrawn. In the case, however, of the late dated lease already referred to, in which certain fields are said to lie opposite and off the Manor of Neyte, and certain produce was to be delivered into the manor, it is evident that the manor-house is intended.

APPENDIX I

ABBOT JOHN [ISLIP] TO RICHARD WHASSHE, A LEASE OF THE MANOR OF EYBURY, 1518.

(Public Records, King's Remembrancer, Conventual Leases, 53.)

[Abbreviations are here extended. The MS. is torn and decayed.]

Hec indentura facta inter Johannem permissione divina Abbatem Monasterii beati Petri Westmonasterii et ejusdem loci conventum ex parte una Et Ricardum Whasshe ex parte altera Testatur quod predicti Abbas et Conventus ex eorum nomine assensu . . . totius Capituli sui concesserunt tradiderunt et ad firmam dimiserunt prefato Ricardo situm Manerii de Eybury cum omnibus terris dominicalibus pratis pascuis et pasturis una cum duabus clausuris jacentibus et earum pertinenciis un[iversis] nuper dimissum Willelmo Bate Exceptis et omnino reservatis prefatis Abbati et conventui et successoribus suis quodam clauso vocato le twenty acres jacente ex opposito Manerii de Neyte ex parte australi ejusdem Quod quidem [quatu]rdecim acras Aceciam uno prato vocato Abbottes mede et una pastura vocata le Calsehaw jacentibus ex parte orientali dicti Manerii de Neyte Necnon omnibus Redditibus et serviciis sectis Curie Visus Franci plegii et eorum proficuis ad Regalitem pertinentibus **Habendum et tenendum** situm Manerii predicti cum omnibus terris dominicalibus pratis pascuis et pasturis et ceteris premissis (Exceptis preexceptis) prefato Ricardo executoribus et assignatis suis A festo Sancti Michaelis presencium usque ad finem et terminum triginta et duorum annorum extunc proximo sequentium et plenarie complendorum **Reddendo inde** annuatim prefato Abbati vel successoribus suis aut ejus certo assignato Viginti et unam libras ad duos anni terminos Videlicet Annunciacionis beate Marie Virginis et Sancti Michaelis Archangeli per equales porciones Unacum sex carectis boni feni falcandi levandi et carandi in Manerium de le Neyte predictum sumptibus et expensis assignatis ad usum predicti Abbatis et successorum suorum [*interlined*, Et eciam cariabit alias sex carectas boni feni] precio cujuslibet carecte iij^s iiij^d Necnon alias sex carectas boni feni deliberabit in Manerium de Neyte ad usum ejusdem Abbatis et successorum suorum quolibet anno precio cujuslibet carecte executores et assignati sui providebunt et dabunt dicto Abbati et successoribus suis unum aprum erga Festum Natalis Domini singulis annis durante termino predicto precii ad minus x^s vel x^s argenti. **Et predictus** Ricardus executores et assignati et expensis omnia et singula focalia ad usum dicti Abbatis vel successorum suorum Vide licet a Ripa Tamesie usque predictum Manerium de Neyte durante termino predicto et habebunt pro qualibet carecta 1^d **Necnon** idem Ricardus executores et

semel in septimana unam carectam de diversis necessariis Hospicii predicti Abbatis vel successorum suorum tociens quociens necesse fuerit a Monasterio Westmonasterii usque Manerium de Neyte et e contra durante termino predicto **Ac insuper** sui cariabunt unam carectam de diversis necessariis Hospicii prefati Abbatis tociens quociens contingat prefatum Abbatem et successores suos remove a predicto Manerio de Neyte usque Manerium de Hendon et a dicto Manerio de Neyte vel Laleham durante termino predicto **Aceciam** predictus Ricardus executores et assignati sui omnia domos et edificia eidem Manerio spectantia que cooperta sunt cum stramine unacum longa Barcaria durante termino predicto reparabunt [ma]nutenebunt sumptibus suis propriis et expensis Et predictus Abbas et successores sui quascumque alias reparaciones et onera ad dictum Manerium necessaria preter escuracionem fossatis et reparacionem haiis sumptibus eorum expensis propriis supportabunt durante termino predicto **Proviso semper** quod si quid in domibus seu edificiis dicti Manerii per prefatum Ricardum executores et assignatos suos per servientes suos per animalia sua quecumque frangantur sive impeiorantur sui omne id quod sic defractum sive impeioratum fuerit emendabunt sumptibus suis propriis et expensis **Et idem** Ricardus executores et assignati sui habebunt competenter heybote ploughbote cartebote et fyerbote de sp de Eybury sive crescentia in eodem Manerio et non alibi expendenda Exceptis et Reservatis prefato Abbati et successoribus suis omnibus loppis de arboribus crescentibus super terras prius sibi reservatas et Manerio suo de la Neyte prefato Ricardo dictum Manerium de Eybury cum ceteris premissis alicui extranee persone ad firmam tradere sive concedere aut terminos suos aliquo modo vendere durante termino predicto sine speciali licencia predicti Abbatis et forisfacture clamei sive status sui in predicto Manerio et ceteris premissis cum suis pertinenciis **Et non licebit** alicui executori seu assignato dicti Ricardi post ejus decesum cessacionem concessionem seu dimissionem premissa cum suis pertinenciis intrare sive aliquo modo occupare Residuum Annorum termini predicti absque nova concessione predictorum Abbatis et Conventus sub forma omnium convencionum in hiis indenturis contentarum cessacionem concessionem seu dimissionem qualitercumque factam vel faciendam uni dictorum executorum seu uni assignatorum in ejus nomine proprio sub sigillo Communi dictorum Abbatis et Conventus secundum consuetudinem usitatam in f [foris]facture clamei sive status sui in predicto Manerio et ceteris premissis cum suis pertinenciis **Et predicti** Abbas et Conventus volunt et concedunt pro se et successoribus suis quod ipsi dabunt uni executorum seu uni assignatorum dicti Ricardi termini predicti sub forma omnium convencionum in hiis indenturis contentarum cum ad hoc specialiter rogati fuerint per unum dictorum executorum seu unum assignatorum infra duos menses supradictos **Et si contingat** predictam Annualement aut firmam predicti Apris et feni superius expressatam a retro fore in parte vel in toto post aliquod Festum festorum predictorum per quadraginta dies Extunc bene licebit prefato Abbati et successoribus suis in predictum situm de Eybury omnibus suis pertinenciis intrare et distringere et districciones que sic captas licite asportare abducere fugare et penes se retinere quousque de predicta firma cum arreragiis ejusdem si qui fuerint predicta firma a retro fore in parte vel in toto post aliquod Festum festorum

predictorum quo solvi debeat per quarterium Annum et nulla sufficiens districcio ibidem invenire non poterit quod tunc bene licebit hac parte deputato in predictum situm Manerii et cetera premissa cum omnibus et singulis suis pertinenciis reintrare et illud ut in pristino statu suo rehabere et possidere dictumque Ricardum executores et assignatos indentura in aliquo non obstante. **Et cum** predictus Ricardus per scriptum suum obligatorium de data presencium teneatur et obligatur prefato Abbati in quadraginta libris sterlingorum sicut [con]fectum plenius continetur **Vult tamen** idem Abbas et concedit pro se et successoribus suis Quod si predictus Ricardus et assignati sui bene et fideliter teneant et perimpleant omnes Quod tunc presens scriptum obligatorium pro nulla habeatur alioquin in omni suo robore stet et effectum **Et predictus** Abbas et successores sui predictum situm Manerii de Eybury predicti prefato Ricardo executoribus et assignatis suis modo et forma superius recitatis durante termino predicto contra omnes gentes warantizabunt per presentes **In cujus** rei testimonium sigillum dicti Ricardi hiis indenturis alternatim sunt appensa **Datum in domo** capitulari predictorum Abbatis et Conventus Westmonasterium predictum sextodecimo die et Anno Regni Regis Henrici Octavi decimo. Et predictus Ricardus quociens cariaabit percipiet de dicto Abbate et successoribus suis qualibet die dominica tam in esculente quam in poculente

APPENDIX II

LANDS, ETC., GRANTED BY ABBOT BOSTON TO THE KING, 1 JULY, 1536,
AS STATED IN THE ACT 28 HENRY VIII., CAP. 49. *Statutes of the Realm*, iii. 709.

With notes, and references to the plan, plate VIII.

All that site, soil, circuit, and precinct of the Manor of Nete within the compass of the moat, with all the housings, buildings, yards, gardens, orchards, fishings, and other commodities in and about the same site.¹

One close lying over against the said site, called *Twenty Acres*.²

A meadow called *Abbot's Meadow*, with a piece of ground called *Cawey Hall*,³ containing in all 13 acres.⁴

¹ 1 on plan. The extent "within the compass of the moat" was about 2 acres, which with $3\frac{1}{2}$ acres "about the same site" made $5\frac{1}{2}$ acres as the whole area of the site.

² 2 on plan. The large field lying between the manor-house and the river. It was always an adjunct of the manor-house.

³ For "Hall" read "Haw", i. e. *Cawsey* or *Causeway Haw*.

⁴ 3 on plan, in three divisions. The large triangular parcel on the south side of the Willow Walk or Causeway. This field was also an adjunct of the manor-house eastward.

18 acres of meadow called *Market Mead*, next the Horseferry over against Lambeth.

32 acres of arable land in divers places.¹

3 acres of meadow in *Temys Mede*.²

4 acres of land and 1 acre of meadow, now in the holding of John Lawrence.

2 acres of land in 3 parcels near the Eye,³ now in the tenure of the same John Lawrence.

2 acres of meadow lying in *Temys Mede*, now in the tenure of the same John Lawrence.

2 acres of meadow lying in *Market Mede*, now in the tenure of John Clarke.

2 acres of land in *Charyng Crosse Felde*, now in the tenure of Thomas Swalowe.

All which premises lying and being in the towns and parishes of Westminster and St. Martins in the Felde, in the County of Middlesex.

One messuage or tenement in *the King's street* in Westminster called *the Lambe* with the yard and wharf thereto adjoining, late in the tenure of John Pomfrett.

3 acres of meadow in *Chelseth Meadow* next the brook in the County aforesaid.⁴

The advowson and parsonage of the *Church of Chelsethe*.

The Manor of *Totyngton* with all and singular the appurtenances, with all those lands, tenements, and other hereditaments now in the occupation of Hugh Mannyng.

The rectory and parsonage of the *Church of Totyngton* in the said County of Mydd., with all the tithes, oblations, offerings, pensions, portions, and other profits and advantages whatsoever they may be, being part or parcel of the said parsonage, or to the said parsonage pertaining or any way belonging.⁵

The site, soil, circuit, and precinct of the *Manor of Hyde*, with all the demesne lands, tenements, rents, meadows, and pastures of the said manor, with all other profits and commodities to the same pertaining or belonging, which be now in the tenure and occupation of one John Arnold.

The *Manor of Eybury* with all the lands, meadows, and pastures, rents and services, being part or parcel thereof, or reputed or taken as part or parcel thereof, and two closes, late parcel of the farm of *Longmore*, in the County of Midd., which Manor of Eybury with the said two closes were in the tenure and occupation of one Richarde Whasshe.⁶

Two banks, the one leading from *Totehyll* to the *Thamyse*, lying between the ditch of *Market Mede* upon the south, and the ditch of the *Burgoyne* and the *Vyne* garden upon the north; the other lying between the same *Market Mede* upon the west, and the *Thamyse* upon the east, in Westminster aforesaid, which now be in the occupation of John Shether.

Three parcels of meadow called *Market Mede* lying between the *Thamyse* and *Totehyll*, and one more⁷ abutting upon *Sheerdyche*, now in the occupation of John Bate.

One close called *Sandypytt feld* containing 18 acres whether it be more or less, in Westminster, with two meadows to the same adjoining, whereof one of the said meadows contains 5 acres and the other 7 acres, now in the occupation of one William Bate.

¹ This, of course, is quite indefinite.

² Thames Mead, by the river in Eybury.

³ The "Aye or Tybourn Brook".

⁴ Chelseth = Chelsea.

⁵ Totyngton = Todington = Tuddington = Teddington. See Newcourt's *Repertorium*.

⁶ On the plan of 1723 "The Manor of Eybury" is written against the farm, 4, which evidently was only a part of the original manor, as parcels formerly found to be in Eybury are in the list now quoted classed separately. The two closes, "late parcel of Longmore," are marked 5 and 6 on the plan; 5 had been divided.

⁷ Moor.

58 THE MANOR OF EIA, OR EYE NEXT WESTMINSTER

One meadow called Longmore containing 8 acres, and one bank extending from *Abbots Bridge* unto the *Thamyse*, which now be in the occupation of one John Lawrence.

A pasture called the *Pryour's Croft* lying next the way leading from *Eye Bridge* to *Eyebury*.²

One piece of meadow lying in *Thamyse Mede* called *Priour's Hoope* containing $1\frac{1}{2}$ acre.

One close called *Bryk Close* lying between the great close belonging unto Eybury on the west and north, and the meadow called *Conduyte Mead* on the east, which Robert Sharpe and Elizabeth his wife, late the wife of one William Vincent, now hold.³

One croft called *Hawarde's Croft*, which now one Edward Stokwood holdeth.

One meadow parcel of *Longmore* containing by estimation 4 acres lying next the *Abbot's Bridge* at *Totehyll* aforesaid, which now is in the occupation of one Nicholas Fyssher lying and being in Westminster.⁴

The remainder of the items are beyond our limits, and may be summarized: Two cottages at *Charing Cross*. A yearly rent going out of a tenement called *the Swan* at *Charing Cross*. A rent going out of the lands of the Abbot of Abingdon in *Charing Cross Field*. Rents from a close at *Colmanshedge*, and from various lands in Westminster, respectively belonging to Sir William Essex, Edward Norres, Sir Hugh Vaughan, and William Jenyn, and one going out of the Manor of *Chelsea*, late in the tenure of William, Lord Sandes. Finally, three closes in *East Greenwich* in the County of Kent, part of the parcel of the farm of *Combe*, late in the tenure of one William Muschampe.

¹ On the plan the meadow is numbered 7, and the bank 8. The bank (not the Aye or Tyburn Brook, 10, along which it ran) seems to have marked the boundary between the parishes of St. Margaret and St. Martin-in-the-Fields. Abbot's Bridge evidently carried the causeway, called the Willow Walk, over the Aye Brook.

² Along the Chelsea Road. The Eye Bridge carried the road over the "Aye Brook or Tybourn", near the site of Buckingham Palace, probably where in Saxon times was Cowford. Eybury here evidently means Eybury Farm.

³ The Conduit Mead is known to have lain where is now Bond Street, and "the great close of Eybury" is supposed to have been the site of Grosvenor Square.

⁴ This parcel (9 on plan) is marked "Longmoore" on the plan of 1614. The moor-farm lay along the "Aye Brook or Tybourn", and at one time included two parcels in Eybury, 5 and 6 as noted. The farmstead seems to have been about where is now the Roman Catholic Cathedral in Westminster.

IV.—*On the Fellows of the Society of Antiquaries of London who have held the office of Director.* By SIR EDWARD WILLIAM BRABROOK, C.B., *Vice-President and Director.*

Read 27th January, 1910.

INTRODUCTION

LORD CARNARVON, in his Presidential Address of 1880,¹ gave a list of Fellows who had held the office of Director. The list comprises the names of many men who distinguished themselves in the service of the Society; and I now submit to the Society such information as I have been able to get with respect to each of them.

In the Elizabethan Society of Antiquaries, which was commemorated by Richard Gough in his preface to the first volume of *Archaeologia*, published in 1770, Sir Henry Bowchier and Francis Tate (whose antiquarian learning won him high praise from Selden) had the title of "Moderators", and Lord Carnarvon suggested that that was the equivalent of the office of Director. We are informed by Spelman² that that Society discontinued its meetings for some years; that its remaining members met together in 1614 to resuscitate it; and that they then appointed "Mr. Hackwell, the Queen's Solicitor, to be their Register and the Convocator of their Assemblies for the present". The person referred to was undoubtedly William Hakewill, of Lincoln's Inn, the famous legal antiquary. In the function of Convocator his office was a sinecure, for the king interposed (under a misunderstanding, as Spelman thought), and no other assembly was ever convoked. The revival of 1614, therefore, died out after that first meeting. Lord Carnarvon thought that the office of "Register" was also similar to that of the Director.

I

Antiquaries again began to meet together in 1707, and among them was Mr. JOHN TALMAN, born in 1686, the son of an eminent architect at West Lavington, in Wiltshire. He was an excellent draughtsman and travelled much in Italy. He was at Florence on the 2nd March, 1709-10, when he wrote a letter to the Dean of Christ Church on the collection of 2,111 drawings made by the celebrated Father Resta (1635-1714) and acquired by the late Monsignor Marchetti, Bishop of Arezzo. It was bound in sixteen folio volumes, and the bishop's nephew and heir desired to sell them, and demanded 3,000 crowns, or £750 sterling. In Mr. Talman's opinion they were worth any money. He was

¹ *Proceedings*, 2nd S. viii. 337.

² Preface to *Treatise on Law Terms*.

making a catalogue to send to the Lord President (I suppose of the Queen's Council). Notwithstanding Mr. Talman's high estimate of their value, the collection was, later in the year 1710,¹ sold to Lord Somers for £600 only. It appears that Mr. Richardson, a painter, collated, purchased, and exchanged many, which were sold and dispersed in his sale, as we learn from a note appended to Mr. Talman's letter when it was published by Mr. Bathoe with other tracts, including a catalogue of the Duke of Buckingham's collection in 1758.² In a few years the whole collection had been dispersed. Possibly some of its contents might still be traced by the bishop's mark of a cross-crosslet.

When the Antiquaries organized themselves into a formal Society in 1717, they appointed Mr. Talman their Director. From their minutes it appears that on 14th Jan. 1718-19, Mr. Director brought a proof of an etched plate of a Roman lamp to be used as a signal or ticket of the Society, which he was pleased to make a present to the Society.

On 25th March he brought a sketch of a design for a plate to be printed as a headpiece or emblem of the works of the Society at the beginning of any publications, and he was ordered to have it etched. We thus owe to him our familiar emblems. It is also stated by Vertue that Talman was the first to propose that the Society should engrave plates of antiquities.

The rule of the Society then in force relating to the functions of the Director was as follows:—"VI. The Director shall superintend, regulate, and have the custody of all the drawings, engravings, and books, manage the printing and sale of them, paying the sums thereon arising to the Treasurer, and deliver to each member his dividend calculated at the common price for which such books and prints may be sold to stationers, and by ballot to receive all votes, carrying the same to the President." Under this rule, on 4th February, 1718-19, he was ordered to deliver out prints of Richard II. The office appears to have been occasionally described as that of Director of the Works of the Society. On 8th July, 1721, Talman wrote to Samuel Gale, "I rejoice to hear our Society is going on so strenuously. I wish we had a proper place to meet in and to set up our books." He presented many of his drawings of Italian antiquities to the Society, and died in 1726, at the early age of forty.

On 20th October, 1743, seventeen years after his death, his letter about the Marchetti collection was laid before the Society by James West, Esq., and ordered to be transcribed on the register. In 1758, as we have seen, it was published by Bathoe; and in 1770 it was reprinted in the first volume of *Archaeologia*. It was

¹ See Mr. Lewis Fagan's useful volume of *Collectors' Marks*, 1883, to which the learned librarian of the Victoria and Albert Museum has kindly referred me.

² See Duplessis, *Les Ventes de Tableaux, Dessins, &c.*, to which I have been kindly referred by Mr. W. Roberts, in *Notes and Queries*, 10th S. xii. 113.

thus the fate of this interesting communication of our first Director to be neglected when it might have been of some use, and to be twice published long after his death and long after the dispersal of the collection to which it referred.

II

It seems that on Mr. Talman's death, the Treasurer, Mr. SAMUEL GALE, temporarily undertook the office of Director as well. He was born in 1681, a son of the Dean of York, and brother to Roger Gale, Treasurer of the Royal Society, and Vice-President of the Society of Antiquaries. He was author of a *History of Winchester Cathedral*, a copy of which is in the Society's library, and of papers on the Horn of Ulphus at York, and on Caesar's passage over the Thames, in the first volume of *Archaeologia*. He gave up the office of Director, retaining that of Treasurer, on 8th February, 1726-7, and Mr. Degge was chosen Director and Assistant Treasurer. At that meeting the contributions of members were fixed at two shillings per month. A year later, 28th February, 1727-8, a question arose as to finding a new place of meeting for the Society, when upon a division there appeared sixteen for a private room, and two for a tavern; and accordingly on 19th October, 1728, the Society met for the first time in its new apartment in the King's Bench Walks. At that time it was limited, by a resolution passed on 18th January, 1726-7, to 100 members. It may be interesting to note here what was the financial position of the Society about this time. At the anniversary meeting of 1735-6, Mr. Gale, as Treasurer, presented his accounts for 1734, showing a balance brought forward from 1733 of £87 4s. 6½d., monthly payments in 1734 £20 17s., admissions that year £8 8s., deficiencies (*i. e.* arrears) received since 1733 £8 6s. 6d. Total £124 16s. 0½d. Several payments in 1734 £40 1s. 7d., leaving a balance of £84 14s. 5½d. Mr. Treasurer was ordered thanks for his great care and trouble, a compliment which has been paid ever since, and now takes the form of thanks for his good and faithful services. Mr. Gale continued to hold the office of Treasurer until 28th February, 1739-40, when he retired, and the unanimous thanks of the Society were awarded to him for the great pains he had taken during the many years he had held the office and for his just administration of it. He was also requested to order a piece of plate of what shape or form he pleased, to the value of ten guineas, to be paid for by the Society, and to bear the following inscription:

SAMUELI GALE ARMIG.

ob Quaesturam

amplius xxi annor.

bene et fideliter gestam

Societas Antiquar.

Londinensis.

L. D. D.

He had been one of the original members of the Society, and he survived to be one of the Council named in its charter in 1752. He died in 1754. In the office of Treasurer he was succeeded by Mr. Charles Compton.

III

SIMON DEGG or DEGGE, M.D., F.R.S., was the grandson of Sir Simon Degge, of Derby, Judge of South Wales, and author of *The Parson's Law*, who¹ was knighted at Whitehall, 2nd March, 1669, and had a grant of arms from Sir Wm. Dugdale: *Or on a bend azure three falcons rising argent armed and belled or*, dated 9th May, 1662. Crest, *a like falcon argent, beakt leged and belled or, issuant out of a ducal coronet*. Mr. Degge appears to have been born in 1694²; he was elected a member on 7th March, 1722-3, and on the same day brought some fine coins and a transcript of Domesday for Derbyshire, written by his grandfather.

At the next following meeting he brought a catalogue of several scarce books of English history in his possession, and on that and on many succeeding occasions exhibited coins and medals, of which he must have had a large collection. On 20th March, 1722-3, he brought an ancient pedigree of the kings of England from Adam to Henry VI, upon vellum, with historical remarks in Latin. On 2nd May, 1723, he was elected a Fellow of the Royal Society; Mr. Harrison, the Assistant Secretary of that Society, has kindly searched the records, and informs me that his proposers were Dr. Stuckely, Mr. Heathcott, and Mr. Sanders. He communicated to the *Philosophical Transactions*³ a paper on a human skeleton, of large size, found at Repton.

He appears to have been active in works of exploration, for on 8th May, 1723, he brought to the meeting of the Society of Antiquaries two pateras, two patellas of red earth, one ampulla, and other things that had been found in the parish of Hinxworth during the preceding month. After 1725 he is referred to as Dr. Degge. As already stated, he was elected Director on 8th February, 1726-7. On the 11th November of that year Thursday night was fixed as the time of meeting, as it still remains. He died in 1729, when only thirty-five years of age.

IV

No trace of the election of a successor to Dr. Degge, or of the presence of any Director at our meetings, appears on the minutes until Thursday, 15th January, 1735-6, "the day appointed by the statutes for the election of officers for the year ensuing," when CHARLES FREDERICK, Esq., was chosen Director. He was the second son of Sir Thomas Frederick, Governor of Fort St. David, and was born 21st December, 1709. He was admitted a member of the Middle

¹ See Le Neve's *Knights*.

² *Fam. Min. Gen.* 983.

³ xxxv. 363.

Temple in 1728, elected F.S.A. on 16th March, 1731, and F.R.S. in 1733. On 22nd February, 1732-3, he brought a fine Roman vessel of red earth, found near Canterbury, a sketch of which is entered on the minutes. He also exhibited medals and other objects. On 2nd May, 1734, the Society agreed that its hour of meeting every Thursday should be 7 o'clock. On 1st May, 1735, it appointed Mr. Alexander Gordon its Secretary, at a remuneration of five shillings every night he shall attend.

Mr. Frederick entered upon his duties as Director with zeal. On the 5th February, 1735-6, he undertook to complete the tables of English coins drawn up by Browne-Willis. Like Mr. Talman he was a good draughtsman, and he enriched the Society's old drawing-book with various sketches. On 11th March, 1735-6, he read his paper on the Ermine Street, which appears in the first volume of *Archaeologia*. On many other occasions he made exhibitions and communications.

On 20th May, 1736, honorary foreign members were first appointed by the Society. At the next anniversary, on 20th January, 1736-7, Mr. Frederick was re-elected Director. The following Thursday a select committee was appointed to consider of the office of Director. The members were Mr. Frederick, Mr. West, Mr. Vice-President Gale, Mr. Treasurer Gale, Mr. Leithieullier, Mr. Theobalds, Mr. Nicholas, Mr. Birch, "or any other member who will attend on that occasion." On the following Thursday it was agreed that three should be a quorum of that committee. It made its report on 24th February, which was to the effect that the duties of Director included the approval of all drawings and inscriptions before they were engraved and the taking into his custody of all copperplates, and that he should have power to appoint a Sub-director. The report was approved. Mr. Frederick was again elected Director in 1737-8, and on 7th April, 1738, Mr. West, painter, had leave to be present at the meeting, when he presented the Society with two sets of his prints of the ancient churches of London, and Mr. Director was desired to place one copy of them in Stow's *Survey of London* in their proper places. On 28th April Mr. Director Frederick acquainted the Society that, being determined to travel into foreign countries, he desired to resign his office of Director, whereby the Society might proceed to the electing another Director in his room. Agreed that Mr. Director Frederick be pleased to continue in the same office even while abroad, but that he would substitute some fit person in his place as Sub-director. The Rev. Mr. Birch was accordingly named to that office by Mr. Frederick, which meeting with the concurrence and approbation of the Society, the Rev. Mr. Birch was declared Sub-director accordingly. Mr. Frederick was again elected Director on 15th January, 1740-1, and on the following Thursday he proposed that no person should be elected a member without a formal nomination stating his qualifications, and signed by

three members. On 20th August, 1741, a proof of the print of the cross at Winchester was referred to him for his opinion. On 26th November he was appointed a member of a committee to inspect the Society's books, prints, and other things, and make a good catalogue. On 21st January, 1741-2, the Secretary read a letter from him, desiring to decline re-election to the office of Director on account of his own affairs engaging much of his time, and thanks were voted to him for the great regard he had shown for the Society for many years. He was M.P. for Shoreham from 1741 to 1754, and for Queenborough from 1754 to 1784. He was Surveyor-General of Ordnance, and was created a Knight of the Bath in 1761. He was not a Baronet, as incorrectly stated in *Archaeologia*,¹ though he was a kinsman of the then Baronet and his own descendants ultimately succeeded to the Baronetcy. On 25th January, 1770, he communicated a paper on Jarrow Church. He died 18th December, 1785.

V

The Rev. THOMAS BIRCH, D.D., was born of Quaker parents on 23rd November, 1705 (plate IX). He became F.R.S. and F.S.A. in 1735. He performed his duties as Sub-director with great efficiency. On 19th May, 1737, he presented the Society with a copy of two volumes, 8vo, edited by himself, being the miscellaneous works of Mr. John Greves (Greaves), Professor of Astronomy at Oxford. On 23rd June it was agreed that the Sub-director do select, from the book wherein are drawings of some English coins belonging to the Society, such as may seem most proper to be engraved. So completely did he fill the functions of Director that on two occasions he took the chair at meetings. On 8th December it was agreed that there be an annual feast held by this Society, on every St. George's Day, except that day fall on a Sunday or Good Friday, on which anniversary the members may, if they please, dine with one another, at their own charge. A select committee was appointed, consisting of Mr. Vice-President Folkes, Mr. Vice-President Gale, Mr. Treasurer Gale, Mr. West, Mr. Sub-director Birch, Mr. Nicholas, and Mr. Holmes, to consider of rules proper for regulating the said annual meeting. On 12th January, 1737-8, it was ordered that the feast be kept at the Mitre Tavern in Fleet Street, and that the ordinary be four shillings per head, with one shilling for a pint of port wine. It was now reported that the Society's number of members was completely one hundred. Discussions arose, and were continued during many meetings, in which Mr. William Bogdani took an active part, as to the questions, 1. of printing a list of the members, 2. of repealing the limit of numbers. On 19th January the Rev. Mr. Birch was chosen Director during the absence of Mr. Charles Frederick,

¹ Vol. i. 61.



THOMAS BIRCH, F.R.S.



GREGORY SHARPE, F.R.S.

PORTRAITS OF FORMER DIRECTORS OF THE SOCIETY OF ANTIQUARIES

Published by the Society of Antiquaries of London, 1910

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and is thereafter referred to as Mr. Director Birch. On 16th March he presented a print, by Hollar, of the frontispiece of a book given to the Royal Society by John Evelyn. On 4th May he addressed to the Society some observations on a medal of Cardinal Richelieu; on 18th May he was desired to prepare an inscription for the print of the Bishop's Chapel at Hereford; on 8th June he brought two volumes of the Catalogue of the Bodleian Library, which he had bought for the Society; on 15th June he was desired to prepare a list, in Latin, of the works of the Society. This he did, and presented it on 14th December. On 3rd August he was desired to add the dimensions of the tesserae to the plate of pavements found near Bath, and on 24th August he directed Mr. Vertue accordingly. On 2nd November he and Mr. Treasurer Gale promised to draw up an account of Arabella, Countess of Lennox, which they did on 11th January, 1738-9.

VI

At the annual meeting on the following Thursday, which was the close of this busy and useful year of Mr. Birch's Directorate, something like a crisis occurred. Mr. Theobald proposed, and Mr. Johnson seconded, that Mr. WILLIAM BOGDANI be Director, and on a ballot being taken, the votes were 12 in the affirmative, 11 in the negative.

Mr. Bogdani, born in 1699, had been elected F.S.A. 23rd November, 1726, and F.R.S. in 1729. In April, 1729, he had presented the Society with a large collection of casts of seals. In 1732 he had exhibited and commented upon two sketches of rock inscriptions from the river Taunton in New England, which gave rise to a curious controversy. On 1st February, 1738-9, the Rev. Mr. Birch, late Director, returned to the Society the book of their works from which he had translated his Latin catalogue. This catalogue did not appear to have quite satisfied Mr. Director Bogdani, who on more than one occasion brought it before the Society for further consideration. He is noted as having made several communications to the Society during his Directorate. At the annual meeting for the election of officers on 17 January, 1739-40, he wrote to say that his affairs obliged him to be out of town for a fortnight, and sent his keys, to be delivered to any person who might be appointed Director in his place, and the Society chose by ballot the Rev. Mr. Thomas Birch, former Director, to be Director for the ensuing year.

Mr. Bogdani married a near relative of Maurice Johnson, and was for many years the usual medium through which the proceedings of the Gentlemen's Society of Spalding were reported to the Society of Antiquaries. He stood for Director on the retirement of Mr. Frederick, but was not elected. He was Clerk

of the Ordnance Office in the Tower, and held a lease from the Crown of the manor of Hitchin, where he died in 1771.

Mr. Birch returned to his functions with his former zeal. On 24th April, 1740, he was authorized to purchase a drawing of St. Mary's Abbey and the manor, and on 8th May was desired to draw up a short account, in Latin, of the hypocaust in Lincoln. This he did on 19th June. He retired from the office in favour of Mr. Frederick in 1740-1, but returned to it in 1741-2, and was annually re-elected until 1746. It is curious that no communication of this able Director and voluminous author should have been selected for publication in *Archaeologia*. On 15th January, 1746-7, notice was given that the Rev. Mr. Birch, late Director, was of late much afflicted in his eyes, and that he desired that the Society would think of some proper person to fill that office. By 1752 he had so far recovered as to accept the office of Secretary of the Royal Society, which he held until 1765. He lived to write the biography of his successor in the office of Director, Dr. John Ward. He died 9th January, 1766, and is buried in the chancel of St. Margaret Pattens. By permission of the Royal Society, his portrait is here reproduced from their collection.

VII

JOHN WARD, LL.D., Professor of Rhetoric in Gresham College, was son of a dissenting minister, and born about 1679. He became a Fellow of the Royal Society in 1723 and afterwards Vice-President. He was elected F.S.A. in 1736-7. On 4th April, 1745, Mr. Vice-President Folkes was pleased to oblige the Society with reading to them a paper which he had brought with him from the Royal Society, written by Professor Ward, on some remains of antiquity in Barkway, Hertfordshire, and to intimate that Mr. Ward's paper would be printed in the *Philosophical Transactions*. On the 25th April Mr. Ward was pleased to present the Society with his own work on the lives of the Professors of Gresham College. The Society returned Mr. Ward their thanks for this book, so acceptable to them. After his election as Director, he read an account of the Court of Wards and Liveries, and made many other communications to the Society. At the anniversary on 21 January, 1747-8, he was re-elected with thanks for his former favours. On 19th January, 1748-9, he was re-chosen, being absent, and thanks were ordered to be returned to him on the first opportunity. On 23rd February the increase in the number of members to 120 was carried by the necessary majority of two-thirds (19 for, 6 against). On 13th April the Director presented his observations on the antiquity and use of beacons. On 18th January, 1749-50, the Treasurer and Director had thanks for their good kind (*sic*) behaviour in their offices and were re-chosen unanimously. On 10th May a committee

was appointed to consider the plan for procuring of a charter, and on the 14th November, 1750-1, the letters patent for incorporating the Society were read. On 23rd April, the anniversary day fixed by the charter, Dr. John Ward was elected Director, and then the Society adjourned in order to dine together.

The early publications of the Society consisted largely of prints engraved by their able artist, George Vertue, and described by the successive Directors, and it now became a practice to reward a Director for his trouble in preparing the inscription and supervising the engraving by giving him six copies of each print. On 8th March, 1753, the Society took a house in Chancery Lane, where it held a meeting for the first time on 12th April. At the anniversary on the 23rd Dr. John Ward was re-elected Director, and on 26th April Martin Folkes, the President, appointed him one of the Vice-Presidents. He continued to hold both offices by annual reappointment, having been appointed Vice-President on 25th July, 1754, by Lord Willoughby de Parham, who had become President on the death of Mr. Folkes. A curious incident occurred shortly after. The Society had been advised, when it obtained its charter, that its existing members should all be re-elected and enrolled as members of the corporate body. This was done, but by some oversight the name of Dr. Stukeley had been omitted, and it was now discovered that Dr. Stukeley, the Society's first Secretary, had never been properly constituted a member of the corporation. The Society at once proceeded to remedy the omission, and on 14th November, 1754, our Director-Vice-President being Chairman, Dr. Stukeley was readmitted. He showed his gratitude to the Society at its next meeting by presenting fifty-two prints, and informing the Society that Bertram's *Richard of Cirencester* was in the press. The doctor, on 6th November, 1755, brought to the Society a map that Bertram had prepared to illustrate that fictitious work, and on the 18th March and 8th April, 1756, read an account of Richard, his family, and his works, and thus launched upon us Bertram's amazing forgery. On other occasions, Dr. Stukeley renewed his active interest in the Society. On 12th December, 1754, he presented drawings of the Leicester pavement and of other objects, and was thanked for that valuable present. On 20th February, 1755, he occupied the chair as the senior member present, and delivered in his drawings of the Old Sanctuary. He died 4th March, 1765, aged 78.

To return to Dr. Ward. On 8th June, 1758, he presented, through Dr. Parsons, his *Four Essays upon the English Language*. In October of the same year he died, and is buried in Bunhill Fields.

VIII

The Ven. JOHN TAYLOR, LL.D., Archdeacon of Buckingham and Canon of St. Paul's, the son of a barber, was born 22nd June, 1704. He was elected F.R.S.

and F.S.A. in 1759, and on St. George's Day in the same year was elected Director, in succession to Dr. Ward. He was at the same time appointed one of Lord Willoughby's Vice-Presidents, and held both offices together until his death on 4th April, 1766, having been reappointed Vice-President by the Bishop of Carlisle on his lordship's accession to the Presidency after the death of Lord Willoughby in January, 1765. During Dr. Taylor's time the work of the Society does not appear to have been strenuous, though there are some interesting incidents. On 5th February, 1761, William Blackstone, the author of the famous *Commentaries on the Law of England*, was elected a member, and on 9th April was admitted. On 11th February, 1762, there was a meeting in very indifferent weather, when the Hon. Horace Walpole, Dr. Stukeley, Mr. Pegge, and nine other Fellows not so well known to fame, were present, but the President and Vice-Presidents were absent, and no gentleman choosing to take the chair the evening was spent in conversation. On 12th March, in the like circumstances as to weather, Dr. Taylor took the chair, but, as only six were present, they declined entering upon business, and spent the evening in conversation. Not unfrequently the record of an evening meeting is a blank. Horace Walpole's name having been mentioned as attending a meeting, it is perhaps as well to say that he got tired of the Society after a time. In 1770 he writes that he had dropped his attendance at the Society's house in Chancery Lane four or five years before, being sick of their ignorance and stupidity. He entered into a controversy with Dean Milles, the then President, as to the Wardrobe Accounts of Richard III.¹ He got increasingly bitter as time went on, referred to *Archaeologia* as "Old Woman's Logic",² and in 1777 said that he had shut himself entirely out of the Antiquarian Society and Parliament, "the archiepiscopal seats of folly and knavery."³ After all this it is rather odd to find him in 1778 hinting a suspicion that there was a cabal in the Society against him, and that Lord Hardwicke was the mover of it.⁴

Dr. Taylor's description of the inscriptions at Netherby, like many other contributions to the Society made at that time, is printed in the *Philosophical Transactions*. He was a great classical scholar. He held the offices of University Librarian and Registrary, was Fellow and Tutor of St. John's, Cambridge, and Chancellor of the diocese of Lincoln. He is buried in St. Paul's Cathedral.

IX

The Rev. Prebendary GREGORY SHARPE, LL.D., Master of the Temple, was born in 1713, and elected F.S.A. and F.R.S. in 1754 (plate IX). He became Director at the anniversary of 1766 in succession to Dr. Taylor, and was immediately ap-

¹ *Letters*, vii. 427.

² viii. 41.

³ x. 26.

⁴ x. 312.

pointed a Vice-President by the Bishop of Carlisle. On the death of that prelate on 7th January, 1769, Dr. Milles, Dean of Exeter, succeeded him as President, and selected Dr. Sharpe as one of his Vice-Presidents. Dr. Sharpe continued to hold the offices of Director and Vice-President until his death on 8th January, 1771. He frequently occupied the chair at meetings. His last communication to the Society was on the 15th November, 1770. In his time some incidents occurred worth noting. On 20th April, 1769, the President directed the Secretary to cease to enter on the minutes the name of every Fellow present. On 14th June, 1770, the Society provided itself with a common seal, and ordered a copperplate engraving from it to be used in *Archaeologia*. On 5th July the President presented the king at a levée with the first volume of *Archaeologia*. Dr. Sharpe was a classical and oriental scholar, and frequently addressed the Society on those subjects, but no contribution of his appears in *Archaeologia*. By permission of the Royal Society a fine portrait of him is here reproduced from their collection.

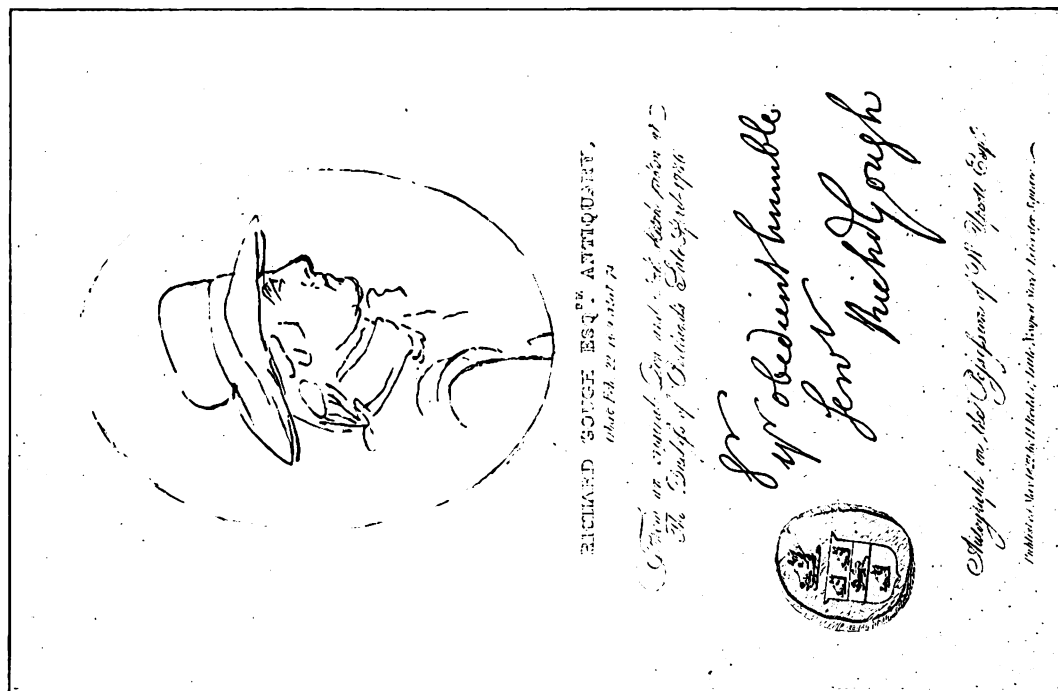
X

RICHARD GOUGH, born of wealthy parents in Winchester Street, Austin Friars, on 21 October, 1735, was elected F.S.A. in 1767 (plate X). On 9th February, 1769, he presented the Society with his *Anecdotes of British Topography*. As already stated, in 1770 he wrote the preface to *Archaeologia*. On 15th February, 1770, he read a paper on the Tomb of Roger, Bishop of Salisbury, 1139, which appears in the third volume of *Archaeologia*. On 31st January, 1771, he sent a paper on a sarcophagus at Llanrwst. On 23rd April of the same year he was elected Director. The room at the Mitre Tavern was too small for the attendance of the Fellows on that occasion, so they dined in Clifford's Inn hall. In following years they returned to the Mitre, where an "elegant entertainment, suitable to the occasion, was provided". Mr. Gough was an energetic Director. Besides the sixteen papers which appear in *Archaeologia*, vols. ii to xi, he made numerous presentations and communications to the Society which are recorded in its minutes. In 1777 Mr. Gough published a *Catalogue of the Coins of Canute*, and in 1786 his great work on *Sepulchral Monuments*: and he was author of *British Topography* (2 vols. 4to) and other antiquarian works. In 1789 he presented his new edition of Camden's *Britannia* in three large volumes, folio. He became F.R.S. in 1775, and quitted that Society in 1795. During his tenure of the office of Director, which lasted until 1797, twenty-six years, the longest upon record, some interesting circumstances arose. In 1777 the annual subscription was raised from £1 11s. 6d. to £2 2s., and the composition from £15 15s. to £22 1s. By 1780 the Society had £2,400 invested in Consols. On 8th June, 1780, the Gordon riots were raging, and the Society adjourned without entering

upon business. In the same year, the king allotted to the Society a noble apartment in Somerset House, where it for the first time held a meeting on 11th January, 1781, and erected a bust of his majesty in token of gratitude. On 13th November, 1784, Dean Milles, the President, died, and on the 26th Mr. Edward King was elected in his place. He at once proceeded, with the assent of the Council, to effect certain reforms, and on the 23rd April very gracefully resigned his seat in favour of Lord de Ferrers, and was thanked and made a Vice-President. At that time the Society had 400 members. On 18th May his lordship was created Earl of Leicester. On the following anniversary in 1758 Mr. King opposed the re-election of Lord Leicester, and drew up a house list of his own. Lord Leicester was elected by sixty-two votes against thirty-seven for Mr. King. Then the Fellows had an elegant dinner at the Devil Tavern. In 1787 and in subsequent years they dined at the Crown and Anchor. In 1789 Joseph Ritson was proposed as a Fellow, but was not elected. The same fate befell Samuel Ireland, but his friends immediately proposed him again, only to be again rejected. On 1st March, 1798, the Society paid £500 to the Bank of England as a voluntary contribution for the defence of the country. At the anniversary of 1798 it was reported that Mr. Gough had withdrawn from the Society. On 30th March, 1799, he presented it with the introduction and index to the second volume of his *Sepulchral Monuments*, and on 17th April, 1806, it is recorded that our late worthy Director, Mr. Gough, presented eight drawings of St. Albans Abbey, made by Mr. Carter. He died 20th February, 1809, and is buried in the churchyard of Wormley, Hertfordshire. By permission of the Royal Society an interesting portrait of him is here reproduced from their collection.

XI

SAMUEL LYSONS, of the Inner Temple, Barrister-at-Law, the second son of the Rev. Samuel Lysons, was born 17th May, 1763, elected F.S.A. on 9th November, 1786, and admitted 23rd November. He was elected F.R.S. in 1797 (plate X). He made frequent communications to the Society of Antiquaries, and succeeded Mr. Gough in the office of Director on 23rd April, 1798. On the 3rd May the Vice-President in the chair delivered the key of office to Mr. Lysons, and he took his seat as Director. He was annually re-elected until 1809. He contributed twenty-eight papers to *Archaeologia*, from vols. ix to xix. His history of the Berkeley family occupied fifteen evenings in the reading. He became Treasurer of the Royal Society in 1810, and was also a Vice-President of that Society. He was Antiquary to the Royal Academy from 1818. Among his important contributions to antiquarian literature are the *Reliquiae Britannicae*



RICHARD GOUGH, F.R.S.



SAMUEL LYSONS, F.R.S.

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Romanae, in two vols., folio, 1801; another edition, three vols., folio, 1813-17, containing 156 plates and said to have cost him £6,000 to produce; his description of the Roman Villas at Bignor and at Woodchester (the latter described in our minutes as a most splendid work); his *Antiquities of Gloucester*, 1791-8, and again 1803-4.

On 3rd April, 1809, he wrote to the President that the Society having for several years done him the honour to elect him into the office of their Director, presuming from thence that he should be honoured in the same manner at the ensuing anniversary, he requested that he might not be reappointed on the ground of his duties at the Record Office in the Tower and his other avocations not giving him the requisite leisure; and the unanimous and grateful thanks of the Fellows were voted to him in the most handsome terms for his great care, abilities, and zeal. He was appointed a Vice-President by Lord Aberdeen on 19th November, 1812. In that capacity, as in every other in which he rendered service to the Society, he was assiduous, having been Vice-President in the chair not less than ten times between November, 1818, and June, 1819, the last occasion being the 17th June. He died on the 29th. At the next meeting, on 4th November, Lord Aberdeen, the President, in an elegant and impressive speech, deplored with great sensibility the loss the Society had sustained. Mr. Lysons is buried at Hampstead.

XII

WILLIAM RICHARD HAMILTON, son of the Ven. Archdeacon Hamilton, who was Vicar of St. Martin's-in-the-Fields, and from 1788 to 1813 one of the Society's Vice-Presidents, was born in London 9th January, 1777 (plate XI). In early life he went to the East as private secretary to the Earl of Elgin, British Ambassador at Constantinople. He was employed in that capacity to obtain from the French the Rosetta Stone and other antiquities, in pursuance of the Convention of Alexandria, and performed his duty with great intrepidity and with success. In 1802 he procured a vessel for the purpose of transporting the Elgin Marbles to England, and embarked in it in company with Captain Martin Leake. The ship was wrecked off the island of Cerigo, and they had a narrow escape for their lives. On 14th June, 1804, he was elected F.S.A., the Rosetta Stone having been deposited by the Government in our library, where a facsimile of it was taken and afterwards published in *Vetusta Monumenta*. On 6th December of the same year he read a paper on the Fortresses of Ancient Greece.¹ On the 11th and 18th Feb., 1808, he communicated an account of a papyrus roll which he had presented to the Society.² In 1809 he was appointed one of the Auditors, and on St. George's Day was elected Director in succession to Mr. Lysons. On 16th October of the same year he was appointed Under Secretary

¹ *Archaeologia*, xv. 315.

² *Archaeologia*, xvi. 171.

of State for Foreign Affairs, an office which he held till 22nd January, 1822, and this probably accounts for his not seeking re-election as Director. From 1822 to 1825 he was Minister at the Court of Naples. On 30th November, 1826, he was again elected Director of the Society on the death of Mr. Combe, but he held office only until the following St. George's Day, when Lord Aberdeen appointed him a Vice-President, an office which he continued to hold until 1847, having been reappointed by Lord Mahon. He took part in the formation of the Royal Geographical Society, and was elected a member of the Royal Society in 1813. He was also a member of the Royal Society of Literature, to which he contributed several papers between 1834 and 1839. In 1838 he was appointed one of the Trustees of the British Museum, and he held that office until 1858. He published *Aegyptiaca* and other works. He was Secretary of the Society of Dilettanti, and an Honorary Fellow of the Academy of Sciences at Berlin. He died 11th July, 1859, at Bolton Row.

XIII

MATTHEW RAPER was elected F.S.A. on 17th November, 1785, and admitted the following Thursday. He had been elected F.R.S. in 1783. On 4th June, 1804, he presented this Society with his *Enchiridium to Scapula's Lexicon*, a duodecimo which cannot now be traced in the library. On 23rd April, 1810, he was elected Director. On 4th July, 1811, he wrote a letter of resignation in the like terms with that of Lysons, and was thanked in a similar resolution, a rather curious indication of the tendency of the Society to follow precedent. What is still more curious is that the resignation announced and accepted in such pathetic language never took effect. In the following August the President, who had become Marquis Townshend, died, and Sir H. C. Englefield was elected in his place. There were then 830 members. Next St. George's Day, 1812, the Society met at 12. As the meeting was far from being concluded at 5, the boxes and the door of the meeting-room were sealed, and the members adjourned to the Freemasons' Tavern to dinner. The scrutators and others returned to Somerset House at 7, and unsealed the door and box no. 1. At 11 o'clock they gave up through fatigue and left boxes nos. 2 and 3 sealed until next day. 435 Fellows voted, and they unanimously re-elected the Treasurer and Secretaries. For the office of President the votes were: George, Earl of Aberdeen, 251; Sir H. C. Englefield, 184. For that of Director: Matthew Raper, 250; George Isted, F.R.S., 185. The death of Mr. Isted was reported at the anniversary of 1822. Mr. Raper as Director wrote the prefatory notes to the account of the Rosetta Stone in the sixteenth volume of *Archaeologia*. He held office until the anniversary of 1813, when Lord Aberdeen made him Vice-President. In that capacity he nearly rivalled Mr. Lysons in the regularity of his attendance. On 5th May, 1814,



WILLIAM RICHARD HAMILTON, F.R.S.



JOHN GAGE ROKEWODE, F.R.S.

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Matthew Raper, as "the Author", presented his *Index ad Specimen Geographicum, Auctor d'Anville, Regiae Humaniorum Litterarum Academiae et Scientiarum Petropolitanae Socius, MDCCLXII*, which bears as an advertisement the words: "The following Index was arranged by the Editor to facilitate the reference to d'Anville's Map of Ancient Greece, and being found very useful for that purpose, he determined to have a few printed, in order to present copies to such of his friends as he thought might be accommodated by it." His death was reported to the Society on the 14th December, 1825.

XIV

TAYLOR COMBE, son of Charles Combe, M.D., F.R.S., F.S.A., an eminent numismatist, was born in 1774, and elected F.S.A. on 14th December, 1799. He had previously communicated to the Society an explanation of a Greek funeral monument. On the 23rd January, 1800, he communicated observations on a bronze figure of a goat from Asia Minor. In December, 1802, he read a paper on the Rosetta Stone. He was elected F.R.S. in 1806, appointed Keeper of the Antiquities (including coins and medals) at the British Museum in 1807, was Secretary of the Royal Society and Editor of the *Philosophical Transactions* from 1812 to 1824, and Director of the Society of Antiquaries from 1813 until his death on 7th July, 1826. He made many communications to the Society, mostly in relation to coins, and was author of several numismatic works, as well as of descriptions of the ancient marbles and terra-cottas in the British Museum. He died 7th July, 1826, at his residence there, and was buried at Bloomsbury. We possess a portrait medal of him, presented by Dr. Gray in 1869.

XV

JAMES HEYWOOD MARKLAND, D.C.L., Solicitor, son of a manufacturer and landed proprietor, was born 7th December, 1788. He was elected F.S.A. on 26th January, 1809, but not admitted until 19th November, 1810. On 23rd January, 1812, he exhibited drawings of Henry VII's tomb. He was elected F.R.S. in 1816 and Director of the Society of Antiquaries on St. George's Day, 1827. On 27th November, 1828, Mr. Henry Hallam announced from the chair as Vice-President that the king had granted two gold medals, value 50 guineas each, to be annually awarded by the Council. It does not appear that these medals were ever awarded.¹ Mr. Ouvry, President of the Society, writing to me on 24th March, 1877, informed

¹ See *Observations on the State of Historical Literature*, by N. H. Nicolas, 1830, p. 39. Mr. (afterwards Sir) N. H. Nicolas had been elected on the Council in succession to Mr. Raper, deceased, on 25th June, 1827. He appears not to have been re-elected the following year, and to have withdrawn from the Society in 1829. His book is a bitter attack upon its management. The Society has always been open to this sort of cheap criticism, and does not appear to have suffered much from it.

me that after a few years the royal grant was found to lead to so much jealousy and heart-burning that the Society requested the discontinuance of the gift! Mr. Markland resigned the office of Director in 1829, and was elected on the Council. Thanks were voted to him for the great zeal, ability, and attention to the welfare of the Society uniformly displayed by him as Director. His papers in *Archaeologia* are in vols. xviii, xx, xxiii, and xxvii. He edited the *Chester Mysteries* for the Roxburgh Club in 1818, and published *Remarks on Sepulchral Memorials*, 1840-1843, besides papers in the *Archaeological Journal*, the *Journal of the British Archaeological Association*, and *Notes and Queries*. Lord Stanhope's address for 1865 contains an obituary notice of Mr. Markland.

XVI

JOHN GAGE, Barrister, of Lincoln's Inn, son of Sir Thomas Gage, was born 13th September, 1786, elected F.S.A. 5th November, 1818, and admitted on 3rd December (plate XI). He became F.R.S. in 1824. He was elected Director at the anniversary of 1829, and retained that office until his death. On 19th November, 1829, he communicated observations on the round towers of Norfolk and Suffolk churches, and afterwards made numerous communications, many of which are contained in *Archaeologia*, vols. xxi to xxx. Among them should be specially mentioned his accounts of his excavations of the Bartlow Hills, and his description of the Benedictional of St. Aethelwold. In 1838 he inherited the estate of Coldham Hall, Suffolk, and took the additional name of Rokewode, by royal licence. He died on 14th October, 1842, and was buried at Stanningfield. At the meeting of the Society on 24th November, Mr. Henry Hallam, the Vice-President in the chair, said that no eulogy of Mr. Rokewode could be necessary before those who were present, most of whom were all aware of his zeal and diligence in their service, his extensive knowledge of antiquity and taste for art. It was within the circle of his intimate friends that he was still more valued for the sincerity of his manner and the excellence of his heart. The premature loss of such a man was deeply to be regretted. By permission of the Royal Society, a fine portrait of him is here reproduced from their collection.¹

XVII

ALBERT WAY, son of the Rev. Lewis Way was born 23rd June, 1805 (plate XII). He was elected F.S.A. 7th March, 1839, and communicated through Mr. J. Gage

¹ Most of the preceding statements are derived from the unpublished MS. minutes of the Society, and I hope that they will be found of sufficient interest to encourage the Council in their resolution to print those minutes *in extenso*. Other statements are given on the authority of the *Dictionary of National Biography*, or derived from various sources. From this point the anniversary addresses of successive Presidents of the Society, as recorded in the two series of its printed *Proceedings*, supply most of the facts.



ALBERT WAY



ADMIRAL WILLIAM HENRY SMYTH, F.R.S.

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Rokewode, the Director, a paper on the effigy of Richard Cœur de Lion in Rouen Cathedral, which appears in the twenty-ninth volume of *Archaeologia*. He succeeded Mr. Rokewode as Director on 15th December, 1842, and held the office until 19th November, 1846, when he resigned, having ceased to reside in London. He had in the meantime read several papers, which appear in *Archaeologia*, and prepared a catalogue of the antiquities, coins, pictures, and other miscellaneous objects in the Society's possession. He was one of the founders and the Hon. Secretary of the Archaeological Institute. He died 22nd March, 1874, and his widow, the Hon. Mrs. Way, presented many books from his library and others of his collections to the Society. The portrait reproduced in plate XII is from a wax medallion by Lucas.

XVIII

WILLIAM HENRY SMYTH, Admiral, son of an owner of large estates in New Jersey, which he lost as a Royalist, and claiming to be descended from the famous Captain John Smith of Virginia, was born 21st January, 1788, elected F.S.A. in 1821, F.R.S. in 1826, and Director S.A. on 7th January, 1847 (plate XII). Among the duties he had to perform as Director was the sorting and cataloguing of the Kerrick collection of 3,777 coins, which in the year 1907 were returned to a descendant of the donor. On the 7th March, 1851, Lord Mahon appointed Captain Smyth to the office of Vice-President in succession to Henry Hallam, retired. He continued to hold the offices of Director and Vice-President together until St. George's Day, 1852, when he retired from the former. He presided on many occasions at the meetings. At the anniversary dinner of 1851, Lord Mahon, P., in the chair, many distinguished persons connected with literature and science, who had been specially invited, graced it with their presence in honour of the centenary of the Society's charter.

On 16th December, 1852, Admiral Smyth was appointed one of a committee to prepare a revision of the statute of the Society under which the Senior Vice-President of the four was to retire each year, and in pursuance of that new statute his Vice-Presidency expired on St. George's Day, 1857. He was also Vice-President of the Royal Society. Lord Stanhope took occasion to pay a tribute of respect to his accurate knowledge, his constant courtesy, and his upright and able mind. He was the author of many important works in astronomical and geographical literature, and had been President of the Royal Astronomical Society and of the Royal Geographical Society. His contributions to *Archaeologia* extended from the twenty-second to the thirty-ninth volumes. He died 9th September, 1865. By permission of the Royal Society, a portrait of him is here reproduced from their collection.

XIX

Percy Clinton Sydney Smythe, sixth VISCOUNT STRANGFORD, D.C.L., was born on 31st August, 1780. He became F.R.S. and F.S.A. in 1825 and Director of the S.A. in 1852, but held office only until December, 1853. In the interval the heated controversies took place which ended in the reduction of the annual subscription from four guineas to two guineas, a measure which Lord Stanhope afterwards justified by its success. From 1846 to 1852 the number of Fellows had gradually fallen from 641 to 524; after that date they steadily rose to 634 in 1857. On 29th April, 1854, Lord Strangford was appointed a Vice-President. He had filled the post of ambassador from his sovereign to several foreign countries, and been rewarded with an English peerage and the decorations of G.C.B. and G.C.H. Lord Stanhope said of him that while he gave lustre and dignity to the offices which he held among us, these posts had never been filled by any one more conciliatory in his manners, more easy at all times of access, or more sincerely desirous to fulfil the duties committed to his charge. He died 29th May, 1855. The Society possesses a miniature portrait of him, presented by Mr. William Smith, F.S.A., in 1876.¹

XX

Sir HENRY ELLIS, Knight of the Hanoverian Guelphic Order, was born on the 29th November, 1777, became in 1797 an assistant librarian at the Bodleian, and in 1800 transferred his services to the British Museum, where he speedily rose to high office. He was elected F.S.A. in 1807, F.R.S. in 1811, and in 1814 became Secretary of the Society of Antiquaries. He held that office for forty years, and is said only to have missed two meetings in all that time. On 1st December, 1853 (the day of the passing of the new statutes), he became Director, holding that office together with the amount of his present emoluments, and the Society returned their warm and cordial thanks to him for his forty years of most able and zealous co-operation in the business and superintendence of their publications, in the confidence that he would carry the same zeal and ability to the office of Director, and in the hope that health and strength might be vouchsafed to him in that office for many years. One event of his directorate was the discontinuance in 1854 of the St. George's Day dinner, which had in each of the two years previous to the centenary celebration been attended by twenty-one members only, and in the years subsequent to that occasion by twenty-six and twenty-seven respectively. On 17th December, 1857, when he was in his eighty-first year, he found the care of his health increasingly necessary, that coming

¹ See *Proceedings*, vi. 519.

down to the evening meetings through the winter would run the risk of impairing it, and that the toil in the preparation and management of the Society's publications could not longer be undertaken by him, and accordingly resigned the office of Director. The record of the Society's sense of the value of his services was not only sent to him, under the signature of the Chairman, but a fair transcript on vellum was also made and the corporate seal affixed to it by the Council. He continued to make occasional communications to the Society. His contributions to *Archaeologia* range from the sixteenth to the thirty-eighth volumes, both inclusive, and were computed by Lord Stanhope to occupy 589 pages in all. He also published many important works, the earliest of which was the *History of St. Leonard, Shoreditch*, in 1799. Among them may be mentioned his *Original Letters illustrative of English History*, in thirteen volumes, and his catalogue of the Society's manuscripts. He died 15th January, 1869, at the age of ninety-two.

XXI

SIR AUGUSTUS WOLLASTON FRANKS, K.C.B., was born in 1826, and became an officer of the British Museum in 1851. He was elected F.S.A. in 1853, became Director in 1858, and retired from that office after nine years' service, returning to it from 1873 to 1879. In 1873 he became F.R.S. In 1891 he became President of this Society, and retained that office until his death in 1897. He was a Litt.D. of Cambridge and a D.C.L. of Oxford. As the career as Director of this illustrious antiquary merged in the higher dignity of President, and as no Fellow can forget the services he rendered to the Society, of which, as Lord Dillon said, he was ever the generous, faithful, and thoughtful friend, I should not do more than refer to the eulogium pronounced by his lordship in the Presidential Address of 1898¹ if it were not for the fact that from 1872 to 1880 Mr. Franks and I were associated together in the work of the Anthropological Institute. I take the liberty of reprinting some observations I addressed to the Fellows of that Institute on 25th May, 1891.²

Since the last meeting the Institute has lost an early and most valuable supporter, and I myself a personal friend of many years' standing, by the death of Sir Augustus Wollaston Franks, who was an accomplished student of every branch of antiquity. Nothing was more remarkable in his long career as Director and ultimately as President of the Society of Antiquaries of London than the depth and breadth of his archaeological learning. There seemed to be no subject that could be brought before that Society of which he was not master. In connexion with the branches of archaeology which touch most closely upon anthropology, he will be remembered for his researches into late Celtic antiquity and for his happy definition of that period of art. As keeper of the Ethnographical Collections of the British Museum, and acting trustee of the Christy

Proceedings, 2nd S. xvii. 149.

² *Journal of the Anthropological Institute*, xvii. 192, 193.

collection, he commenced the practice, which has been continued under Mr. Read, now his successor,¹ of bringing before the Institute any remarkable ethnographical objects that were about to be acquired by either of those institutions. He was for many years one of our Vice-Presidents, and displayed towards the Institute the same enlightened liberality which distinguished him in other connexions, having contributed largely to the fund raised for clearing off the debt with which the Institute was encumbered at its starting. His munificent gifts to the nation, far exceeding in value all that he had ever received in salary in his public employment, were fitly acknowledged by his being raised to the dignity of K.C.B. When it was suggested that the Council of the Institute should dine together after their meetings, Mr. Franks was one of those who most warmly supported the proposal; for a long time he sacrificed other engagements to that of this meeting, and he introduced to them at those dinners many congenial guests.² These may appear to be trivial incidents to record, but it is in such slight indications of a kindly and generous nature that some of the pleasantest recollections of departed friends are to be found. Of his skill and good fortune as a collector of antiquities, of his great learning in many obscure branches of Oriental art, of his enthusiastic devotion to antiquarian research, of his patient assiduity as an investigator, it is hardly necessary to speak. He inspired those who knew him best with the deepest admiration and attachment, and has left, not only in the public institutions of which he was an officer, but also in this Institute, a memory that will be long cherished.

I may pause here to note a fact of some interest. From the year 1727 to the year 1867, a period of 140 years, every Director of the Society of Antiquaries, with the single exception of Mr. Way, was a Fellow of the Royal Society. The association between the two Societies was close and intimate. For a long time they were housed in the same building, used a common vestibule, and fixed the time of their meetings at a different hour of the same evening, so that the Fellows might attend both. This close association came to an end in 1857, when the Royal Society removed to Burlington House, and was not renewed in 1874, when the Society of Antiquaries followed them there. In the interval, the meeting-room which had been occupied by the Royal Society was transferred to us. Even before 1857, however, Lord Stanhope, as a member of both Societies, had perceived that the old union between science and literature which was embodied in the pleasant relations of the past had been undergoing a process of gradual dissolution, and the tendency to confine the fellowship of the Royal Society to persons engaged in the pursuit of physical science has greatly increased since that date. Only seventeen persons now enjoy the distinction of belonging to both Societies. Fifty years ago there were eighty-one persons Fellows of both. In other words, the proportion of Fellows of our Society who are also Fellows of

¹ Now also his successor in the office of President of the Society of Antiquaries.

² He also took great interest in the revival of the annual dinner of the Society of Antiquaries, and presided at Mercers' Hall and at the Holborn Restaurant.

the Royal Society has been reduced from 14 per cent. to less than 2½ per cent. I have here gratefully to acknowledge the courtesy of that Society in lending me some of their fine collection of engraved portraits.

XXII

CHARLES SPENCER PERCEVAL, LL.D., Barrister-at-Law, grandson of the Right Hon. Spencer Perceval, was born 11th February, 1829, and elected F.S.A. in January, 1860. He was appointed Director on the resignation of Mr. Franks in 1867, and held the office until 1872, when he resigned it on being appointed Secretary of the Commissioners of Lunacy, and Mr. Franks returned to office.

In 1874 Mr. Perceval became Treasurer, and held that office until his sudden death from heart disease on 29th January, 1889. "During his tenure of the post of Director, Mr. Perceval, in addition to his other duties, edited two parts of the sixth volume of *Vetusta Monumenta*, and arranged for publication a List of Sepulchral Monuments." His favourite subject was mediaeval seals, on which "his authority was supreme". He arranged and catalogued the Society's collection of impressions and matrices of seals, and sorted out and arranged for binding the fifty parcels in which the Society's Thorpe MSS. were contained.

XXIII

HENRY SALUSBURY MILMAN, son of General F. M. Milman and nephew to Mr. Octavius Morgan, a valued Fellow of the Society, was born 26th November, 1821, called to the Bar and elected Fellow of All Souls in 1848, elected F.S.A. in 1854, withdrew in 1861, and was re-elected in 1869. He became Director in 1880, and retained the office until his death in 1893. He contributed eight memoirs to *Archaeologia*, and made several other communications recorded in our *Proceedings*.

XXIV

Harold Arthur, seventeenth VISCOUNT DILLON, son of Arthur, sixteenth Viscount, who was himself a Fellow of the Society, was elected F.S.A. in 1873, served as Secretary from 1886 to 1892, as Vice-President from 1892 to 1896, and on the death of Mr. Milman became Director from February to April, 1894.

On the death of Mr. Franks he became President. To this statement of facts I will only add that in 1876 and 1877 Captain Harold Dillon (as he then was) and I were jointly Directors of the Anthropological Institute.

XXV

FREDERICK GEORGE HILTON PRICE was elected F.S.A. on 12th January, 1882, member of Council in 1887, 1888, 1891, and 1892, and Director 1894. He filled

that post for fifteen years, and his unexpected death in March, 1909, as the sequel of a surgical operation, was felt as a personal loss by the Fellows of the Society generally, so greatly had he endeared himself to them by his courtesy and geniality, and by his loyalty to the Society and devotion to his duties. He was a liberal supporter of Egyptian exploration, and took an active part in many explorations in England.

I believe that the following Table gives a complete list of the Directors of the Society, with in each case the date of birth (where known), date of election as a Fellow, date of first election as Director, and date of death :

		BORN.	F.S.A.	DIR.	DIED.
1.	John Talman	1686	1717	1717	1726
2.	Samuel Gale	1681	1717	1726	1754
3.	Simon Degge, F.R.S.	1694	1722	1727	1729
4.	Charles Frederick, F.R.S.	1709	1731	1735	1785
5.	Thomas Birch, F.R.S.	1705	1735	1738	1766
6.	William Bogdani, F.R.S.	1699	1726	1739	1771
7.	John Ward, F.R.S.	1679	1737	1747	1758
8.	John Taylor, F.R.S.	1704	1759	1759	1766
9.	Gregory Sharpe, F.R.S.	1713	1754	1766	1771
10.	Richard Gough, F.R.S.	1735	1767	1771	1809
11.	Samuel Lysons, F.R.S.	1763	1786	1798	1819
12.	William Richard Hamilton, F.R.S.	1777	1804	1809	1859
13.	Matthew Raper, F.R.S.	(? <i>cir.</i>) 1740	1785	1810	1825
14.	Taylor Combe, F.R.S.	1774	1799	1813	1826
15.	James Heywood Markland, F.R.S.	1788	1809	1827	1865
16.	John Gage Rokewode, F.R.S.	1786	1818	1829	1842
17.	Albert Way	1805	1839	1842	1874
18.	William Henry Smyth, F.R.S.	1788	1821	1847	1865
19.	Percy Viscount Strangford, F.R.S.	1780	1825	1852	1855
20.	Henry Ellis, F.R.S.	1777	1807	1853	1869
21.	Augustus Wollaston Franks, F.R.S.	1826	1853	1858	1897
22.	Charles Spencer Perceval	1829	1860	1867	1889
23.	Henry Salusbury Milman	1821	1854	1880	1893
24.	Harold Viscount Dillon	1844	1873	1894	
25.	Frederick George Hilton Price	1842	1882	1894	1909
26.	Edward William Brabrook	1839	1860	1909	

V. *The Church of Edward the Confessor at Westminster.* By the Very Rev.
JOSEPH ARMITAGE ROBINSON, D.D., F.S.A., Dean of Westminster.

Read 10th February, 1910.

IN seeking to recover the form and extent of the church which St. Edward built, we have two sources of direct evidence to guide us. First, there is the scanty evidence in stone, which consists of three Norman bases which remain beneath Abbot Ware's pavement in the presbytery. Secondly, we have the written evidence of a description of the church in a biography of the king written immediately after his death.

I shall begin with the evidence in stone. Last Easter (1909), following a hint of Mr. Lethaby's, I visited the magnificent ruins of the abbey church of Jumièges, and I was greatly struck by the resemblance of certain Norman bases in the presbytery to those which remain in a similar position at Westminster. I made a rough sketch of one of these, and with the help of a friend took some hasty measurements from which it was possible to set out an approximate plan of their position. On my return I found that the bases corresponded very closely in size on the ground plan with those at Westminster, but that they differed slightly in relative distances. At Jumièges the distance between two bases on one side was 1 foot less than at Westminster (13 ft. 9 in. as against 14 ft. 9 in.), but the distance from base to base across the presbytery was 8 inches more (27 ft. 4 in. as against 26 ft. 8 in.). It appeared certain that at Jumièges the original presbytery consisted of two bays and an apse, and that the bases were set against an enclosing wall, the ambulatory being an addition of a much later period. It appeared to me therefore that I had a *prima facie* confirmation of Mr. Lethaby's dictum: "If we seek for a direct prototype [of Westminster] it is probable we should look to Jumièges."¹

There is ground for thinking that Edward was at one time befriended at Jumièges by the abbot Robert, whom he afterwards brought to England and made Bishop of London. Robert, to the disgust of the English, became Edward's chief adviser, and after he had been made Archbishop of Canterbury the quarrel became so fierce that he had to go into exile: he died at Jumièges, and was buried there in the great church of his own building. We can hardly

¹ *Westminster Abbey and the King's Craftsmen*, 100.

doubt that Robert, who was at Edward's right hand from 1043 to 1052, helped to determine the plan of the king's new church at Westminster.

But one grave difficulty presented itself to my mind. All the authorities insisted that Westminster had a pillared apse and an ambulatory, probably with radiating chapels. Subsequent visits, however, to Cérisy-la-Forêt, Lessay, and some other early Norman churches, made me thoroughly sceptical on this point; and it is with great satisfaction that I find that Mr. Lethaby has on grounds of his own been led to revise his earlier judgement and has pronounced in favour of a closed-in presbytery "of the normal two-bayed type found in early Norman churches".¹

So much for the existing fragments of St. Edward's church. I turn to the written evidence. It comes to us from a writer who dedicated his work to Queen Edith, who died in December, 1075. Indeed it is quite possible that he wrote before the end of 1066, for he makes no reference to the Conquest. His style is defective and sometimes obscure; but I think that his description tallies admirably well with a church such as Jumièges was, and such as Cérisy in its main features is to-day.

Before discussing afresh this much-debated description, I will try to put into simple words what I imagine we should have seen in the year 1066. Passing east of the old Saxon church, in which the monks have continued till now to chant their offices, we enter the new church by the west porch. We find ourselves in a nave of eight bays, some 60 feet high to its wooden roof, some 72 feet wide from wall to wall.² The aisle-arches are of modest height; the triforium-arches are large single openings; above these there is a wall with small clerestory windows. Going forward to the middle of the crossing, we find ourselves in the quire, which is set under the great tower. Before us is the presbytery, consisting of two bays, and a vaulted apse; at the entrance of the apse stands the altar of St. Peter. The presbytery is walled in on either side. Looking now to the south side of the cross (and the north side has a similar arrangement) we see a low gallery, sustained by a strong pillar and a vault; above and beneath the vault an apse is thrown out to the east.³ The gallery

¹ *Journal of the R.I.B.A.*, 3rd S. xvi. 80. Models in stone of the Norman bases (a quarter of the original size) have been made, and are preserved in the Norman undercroft. Mr. Lethaby has acceded to my request that he would append a note on the architectural conclusions which may be drawn from them.

² Lanfranc's nave at Canterbury was 72 feet wide, which is one foot less than the nave of his abbey at Caen (Willis, *Architectural History of Canterbury*, 64 f. Mr. J. Bilson, however, tells me that the nave of St. Stephen's at Caen is practically 74 feet wide). The present nave of Westminster is 73 ft. 5 in. across from wall to wall.

³ Compare the language of Gervase of Canterbury, who thus describes the "cruces", or transepts, of Lanfranc's church: "utraque (sc. crux) in medio sui pilarium fortem habebat, qui fornicem a parie-

over this vault is reached by a circular staircase, bulging out in the corner of the transept. Above this low gallery the south wall of the transept rises unbroken, save for a few windows, to the wooden roof.

We may now proceed to consider the text of the passage in Harl. MS. 536, in which the process of the building of St. Edward's church is described. I have divided it into paragraphs according to the matters to which the writer refers, viz. (1) the presbytery, (2) the nave, (3) the crossing, (4) the site in general.

Principalis arae domus altissimis erecta fornicibus quadrato opere parique commissura circumvolvitur.

Ambitus autem ipsius aedis duplici lapidum arcu ex utroque latere hinc et inde fortiter solidata operis compage clauditur.

Porro crux templi, quae medium canentium deo chorum ambiret, et sui gemina hinc et inde sustentatione mediae turris celsum apicem fulciret, humili primum et robusta fornice simpliciter surgit, coeleis multipliciter ex arte ascendentibus plurimis tumescit, deinde vero simplici muro usque ad tectum ligneum plumbo diligenter tectum pervenit : subter vero et supra disposite educuntur domicilia, memoriis apostolorum, martyrum, confessorum ac virginum consecranda per sua altaria.

Haec autem multiplicitas tam vasti operis tanto spatio ab oriente ordita¹ est veteris templi, ne scilicet interim inibi cominorantes fratres vacarent a servitio Christi, ut etiam aliqua pars spatiose subiret interjaciendi vestibuli.

I venture to offer the following translation of this passage :

The sanctuary of the high altar rises up with very high vaults : it is made with squared stones and even jointing, and is brought round in a curve.

But the main church is compassed about with a double stone arching on both sides, and is closed in, this way and that, by solid work of a strong construction.

Then the crossing, which is to contain in the middle the choir of those who sing God's praises, and with its twofold abutment on either side to steady the lofty summit of the tower in the middle, rises simply at first with a low and sturdy vault, swells with many a winding stair of elaborate artifice, but then with a simple wall reaches the wooden roof, which is carefully covered with lead. Above and below projecting chapels are arranged, to be consecrated by their altars to the commemoration of apostles, martyrs, confessors, and virgins.

Now the whole of this vast and elaborate work was started so far east of the ancient church that the brethren of the place might not have to cease in the meantime from the service of Christ, and also that some part of the porch which was to be set in between might have room to follow on.

A few notes must be added on points of interest or difficulty.

tibus prodeuntem in tribus sui partibus suscipiebat . . . crux australis supra fornicem organa gestare solebat : supra fornicem et subter porticus erat ad orientem porrecta" (Rolls Series 73, i. 10).

¹ *ordita*] *orditum* MS. The writer, or a copyist, wrote it carelessly, as though the nominative had been *multiplex opus*.

Principalis arae domus] This, and not *principalis area domus*, which is given in Camden's extract (*Reges, Reginae, etc.*, preface), is unquestionably the right reading. *Domus* is frequently used not for a complete house, but for an office or chamber in a building. Here it is the portion of the building which contains the chief altar; as the *domicilia* mentioned later contain inferior altars, and are on a smaller scale.

altissimis fornicibus] This can hardly be taken as plural for singular, and explained of the high vault of the apse alone. Two interpretations suggest themselves: either (1) the two bays of the presbytery were vaulted also, as at the Abbaye aux Dames at Caen and in some other early churches in Normandy; or (2) the presbytery was walled only up to the floor of the triforium, and the upper vault of the aisle was visible, as might well be the case if the triforium arches were large and if there was a semi-barrelled vault (*demi-berceau*).¹ The first appears to me the more natural interpretation.

Ambitus autem ipsius aedis] *Ambitus*, and not *abitus*, is the reading of the MS. Assuming, as I do, that the nave was built, and was more than thrice the length of the presbytery (as at Jumièges and at Cérisy), it is natural to speak of the nave as *ipsa aedes*. The double row of great arches, one over the other, would be the most impressive feature as you looked from side to side. *Autem* marks the contrast in passing from the presbytery to the nave.

crux templi] The word *crux* is at first used of the whole crossing from north to south, including the space under the tower. But it is presently used with reference to one side alone, as the gallery and wall at one end are described. So Gervase of Canterbury, describing Lanfranc's church, says: *praedicta magna turris crucem habebat ex utroque latere, australem scilicet et aquilonalem*.²

ambiret] The tense is explained by the foregoing context: for the writer's description does not come at the end of Edward's life, but while the work is still in progress. He uses the present tense for the most part, the "historic" present; and his relative clauses are in the imperfect subjunctive, expressive here of intention. Compare also, towards the end, *consecranda* and *interjaciendi*. But we may not assume from this that when he wrote the things described were still only in contemplation. He is describing the process of building.

simpliciter] This is perhaps in contrast to the double arcade where there is a triforium and not an open gallery.

cocleis multipliciter, etc.] *Multipliciter* is in rhetorical contrast to the preceding *simpliciter* and the following *simplici muro*.

interjaciendi vestibuli] Lit. "of a porch to be made to intervene": not *interja-*

¹ As at St. Stephen, Caen, and at Gloucester. A trace of such a vault is to be seen in the south aisle of the presbytery at Cérisy.

² Rolls Series 73, i. 10.

cendi, as it has been sometimes falsely printed. There is nothing in the language here used to suggest a temporary vestibule connecting the old Saxon church with the unfinished Norman nave. I imagine that "some part of the porch" projected conspicuously westward. The towers on either side may not have been at first carried up any great distance. There is such a projecting porch at Jumièges; and a most interesting porch of a different character is a striking feature of St. Nicholas at Caen. That the porch was a feature at Westminster will appear from a passage of Sulcard to be quoted presently.

This, then, is what St. Edward's church meant to a man who had never seen anything on so elaborate a scale before, and who writes of it enthusiastically and with considerable descriptive skill.

First, a presbytery with high vaults and a circular ending, built with even masonry.

Secondly, a great nave with two rows of arches, one above the other, on each side, and a strong outer containing wall.

Thirdly, a crossing with various notable features: namely, a lofty tower; a quire beneath it; and at either end of the crossing, instead of the triforium, a low gallery, with a spiral staircase partly in the thickness of the wall, and a long stretch of plain wall up to a wooden roof covered with lead. Chapels project on the level of the gallery and on the ground floor below.

The new church stands well to the east of the old, so that the monks remain in the interval undisturbed in their services, and there is room for a projecting porch at the west end.

But a question must at this point be faced: Did St. Edward finish his church? For nearly half a century we have been persistently assured by every writer on the subject that he did not. In 1860, indeed, when Gilbert Scott read the paper which gave its name to the important collection of studies entitled *Gleanings from Westminster Abbey*, he had no suspicion that St. Edward's church was left unfinished at his death: neither Wren, nor Widmore, nor Brayley had made any such suggestion. J. H. Parker, who edited the *Gleanings*, appended a footnote to Scott's paper in which he said: "It is clear that the choir was the only part finished at the time of the dedication." Scott then adopted this view, basing it, as apparently Parker had done, on the fuller text of the contemporary biographer which Dr. Luard had only just published.¹ Stanley in his first edition of the *Memorials of Westminster Abbey* (1863) adhered to the older view; but in later editions he recognized the new opinion of the experts. Since then we have had nothing else taught us but this novel doctrine, which has now come to be considered unimpeachable orthodoxy.

¹ *Lives of Edward the Confessor* (Rolls Series 3), 417. Previously the passage had only been known from an extract given by Camden in his *Reges, Reginae, etc.*

Let us turn back to the earliest documentary evidence, and investigate the question afresh.

Sulcard is our first Westminster historian. He was a monk under Abbot Vitalis, who was summoned from the abbey of Bernay by William the Conqueror in 1076, and was buried in the south walk of the cloister about the year 1085. We note in passing that this place of burial suggests that the cloister and frater were at least some way advanced by this date: it was a common practice to bury an abbot on the site of his building operations.¹ Sulcard's narrative is dedicated to Abbot Vitalis, whom he speaks of as both "governing and constructing" the monastery (*de hujus beati Petri quod regitis et construitis monasterio*). Most of Sulcard's work is taken up with the earlier history of the abbey: only at the close does he come to the Confessor and his rebuilding. "Up to this time," he says, "had lasted the same monastery which we have all seen: it was purposely destroyed that the nobler one might rise which now we see, wherein so great a king might choose his sepulture, and with his bountiful and energetic queen await his last day. Accordingly the work that had been begun was pushed forward by the king's command, and after a few years, supported on divers columns and vaulted with manifold arches on every side, being finished to the very porch (*vestibulum*), it was shown forth to the bishops for consecration, and to all the nobles of the realm."

As this passage has never been printed, though the most important sentences are cited in Widmore's footnotes,² I give here the text from Faustina A iii. f. 16:

Perdurabat adhuc idem monasterium quod omnes vidimus; habito consilio est dirutum, ut surgeret nobilius quod nunc videmus, et ubi tantus rex sepulturam sibi eligeret, et cum sibi desponsata unice liberalitatis et industriae regina diem supremam expectaret. Festinatur ergo ex praecepto regis coeptum opus; et post paucos annos, diversis fultum columnis et multiplicibus volutum hinc et inde arcubus, usque ad ipsum vestibulum perfectum praemonstratur consecrandis (*sic*) episcopis et cunctis regni proceribus.

Sulcard then has no notion that Edward's church was left unfinished. On the contrary he affirms that it was "completed to the very porch".

Our next trustworthy evidence is that of William of Malmesbury (1124), who says in well-known words,³ that Edward was buried in the church of

¹ About the same time Athelais, the first wife of Geoffrey de Mandeville, was buried there: as appears from his gift of the manor of Eye (Westminster "Domesday", f. 103): "Ego Goffridus de magna villa pro anima mea et pro anima conjugis mee Athelais in clauastro sancti Petri sepulte, qui et juxta eam sepeliendus sum," etc. Abbot Edwin had already been buried in the cloister, probably in the east walk. So also Hugolin, King Edward's chamberlain; and Sulcard was to follow. The remains of these three, together with the supposed Queen Ethelgoda, were afterwards disturbed at the time of King Henry III.'s rebuilding, and placed in one tomb in the chapter-house (Flete, 83).

² Widmore, *History of Westminster Abbey* (1751), p. 10 f.

³ *Gesta Regum*, Rolls Series 90, i. 280.

Westminster, which was the first built in England in that style (*illo compositionis genere*) which now all men imitate at vast expense. He gives no hint that Edward's church was an unfinished fragment. Nor does Osbert, who wrote *St. Edward's Life* in 1138; nor any ancient author that I know. The tradition, indeed, was expressly to the contrary; for Bishop Gilbert Foliot, whose powerful advocacy largely contributed to bring about the canonization of the saint, writing to the Pope in 1160 speaks of the church which King Edward had "brought to a most happy completion" (*beatissime consummavit*).¹

If indeed Edward had left the church unfinished, we should certainly expect to hear that William, who spoke in honorific terms of the place of his coronation, and was diplomatically eager to honour Edward's memory, had contributed to the work of completion. On the contrary we find the tradition, for we cannot dignify the evidence of what is called his First Charter by any higher term, that William gave a hundred pounds of silver to complete the boundary walls (*macerias*) of the abbey, besides erecting costly tombs for Edward and Edith, and making substantial gifts of estates.²

So far then as written evidence goes, I have not found a hint anywhere that Edward's church was unfinished at the time of its consecration: all the evidence goes the other way.³ Of architectural evidence all that has ever been pleaded is the discovery of "some rather rich fragments of Norman work, found under the nave floor, when the new stalls were being erected in 1848" (Scott: who pictures them in *Gleanings*, p. 15). But these may have come from a screen, or some other twelfth-century addition to the main structure.

Let us now pass from the structure of the Confessor's church to consider some of the details of its arrangement.

The quire was under the tower: it is not unlikely that it occupied a bay to the west besides. Analogy with other churches suggests that it had a small matin altar at the east of it, and was closed at the west by a stone screen with an entrance door. A bay west of the choir entrance we should expect a rood-loft, with a beam above it carrying a cross with Mary and John, and perhaps two

¹ *Materials for Life of Becket*, Rolls Series 67, v. 19: "in ecclesia . . . quam a fundamentis erectam constituit, et amplissime dotatam, omnibus quae ad decorem domus Dei sunt in honorem Dei et beati Petri nobilitatam, beatissime consummavit."

² D. (= Westminster "Domesday") ff. 51 b, 52 b.

³ It is right to refer to a statement quoted by Mr. Lethaby (p. 104) from Leland, who extracts it from a chronicle of Malmesbury: "Anno D. 1110, inchoatum est novum opus Westmonasterie" [Leland, i. 305]. The date is a mistake for 1220, and the reference is to the new Lady Chapel: the next sentence speaks of the removal (*hoc anno*) of the Canons of Salisbury from Old to New Sarum. The whole is given in *Eulogium Historiarum*, Rolls Series 9, iii. 116, under the year MCCXX (not MCX, as Leland must have read).

cherubim, as in Lanfranc's nave at Canterbury, and certainly in later times at Westminster. The rood-screen would be pierced with two small doors, between which would stand the nave altar dedicated to the Holy Cross.

As it is most important to distinguish inference from fact, I will point out that the one attested fact here is that the quire was under the tower. I shall be able later to prove the position of the altar of Holy Cross.

Returning eastwards, we have reason to believe, from what has been said above, that there was provision for five altars on the ground floor, each in its own apse: namely, the high altar at the entrance of the great apse (and therefore on the very spot where it stands to-day); an altar at the end of each aisle of the presbytery, and an altar in the east side of each transept. On the upper floor there was provision certainly for two more, and perhaps for four.

The high altar was dedicated to the Prince of the Apostles. Can we say anything as to the rest? Let us begin with what is most certain, the altar of St. Nicholas. The Anglo-Saxon Chronicle under the year 1072 tells us that Egelric, once Archbishop of York, then Bishop of Durham, after a twelve years' sojourn at Peterborough was sent as a prisoner by William to Westminster: "and there he died on the Ides of October (Oct. 15th), and is there buried within the monastery in the chapel of St. Nicholas."¹ It is interesting to note so early a dedication to St. Nicholas, before his violent translation from Myra to Bari had opened the period of his great popularity.² The present position of the chapel of St. Nicholas gives ground for a conjecture as to its place in the Norman church, viz. at the end of the south aisle of the presbytery.

The next evidence that I propose to take comes from Abbot Ware's Customary. But I must say at once that this is a dangerous book to handle. It is responsible for a number of pretty myths already, and it will mislead any one who does not constantly remember that it was begun in 1266, when there was nothing but a nave for the monks to worship in, and that it was not finished till some years after the death of King Henry III, when the new choir was in full use and linked on to the old nave.

No one who has once read them can forget the pathetic sentences in which Gervase of Canterbury tells of the five years' exile in the nave of Christ Church after the great fire of 1174.³ No such hideous disaster had befallen the West-

¹ "Innan s̄c̄e Nicholaes portice": rendered "in porticu sancti Nicholai", in *Waverley Annals*, Rolls Series 36, 192. For the use of "porticus" as a chapel cf. Bede, *H. E.* ii. 3, v. 20: also Ethelwold's *Regularis Concordia*, "eundum est ad matutinales laudes de Omnibus Sanctis, decantando antiphonam ad venerationem sancti cui porticus ad quam itur dedicata est" (Reyner, *Apostol. Ben.*, app. p. 81) Willis, *Canterbury*, p. 39, gives reasons for his bold rendering of it as *apse*.

² "The earliest authentication in an English calendar of the feast of St. Nicholas" appears to be in the Cotton MS., Nero A ii, of the eleventh century (Edm. Bishop, *Bosworth Psalter*, 171).

³ Rolls Series 73, i. 5, 10: "in hac predicta navi . . . post incendium per quinquennium exulavimus."

minster monks, but none the less they had for the time lost at least ten altars, and for more than twenty years their elaborate ritual was huddled up in the nave. The effect of this upon their customs is directly referred to in a sentence of the Customary, which occurs in a part of the manuscript considered too defective to be printed in Maunde Thompson's edition. I quote it from the original transcript which he made for the Dean and Chapter: "This, as has been said already, has gone out of use in modern times for lack of altars."¹ No doubt the inevitable breaches of custom, which were of so long standing already, made it necessary to regularize proceedings in view of a return to the normal conditions of worship. The appearance of a new Customary at this particular moment is naturally explained by such a necessity.

We must therefore try to distinguish between (1) old usages, as they are expressly called, which belonged to the Norman church before 1245; (2) temporary usages, which were necessitated by a limitation to the nave; and (3) new or revived usages, when the new quire was united to the old nave. For a hundred years after this the monks had a complete church; but then for a century and a half they lost their nave; and they had hardly regained it when the summons began to sound for their own departure. These considerations must be borne in mind if we are to find safe guidance in the Customary for any of the various periods of the church's history.

A most important passage for our present purpose is found on pp. 45, 46 of the Customary.² In old days, we are told, the sacrist kept seven lamps burning day and night in the church; but now there are only five. The reason of the change need not detain us now. Here we are concerned with the five, "which without doubt, as of right and ancient custom, the sacrist is bound to find." These are:

- (1) before the altar of Holy Cross in the nave;
- (2) before St. Paul's altar and the image of the Crucified, to kiss the feet of which the people used to go up steps on one side and down on the other;
- (3) before the old altar of St. Mary;

¹ Transcript, p. 445: "hoc, ut prefertur, pro defectu altarium ab usu recessit moderno." The corresponding passage in the derived Customary of St. Augustine's, Canterbury, (p. 311) flounders curiously in its attempted adaptation.

² "Set idem sacrista quinque proculdubio lampades per totum annum, quae in ecclesia die noctue ex recta et antiqua consuetudine jugiter ardere solent, invenire tenetur: unam videlicet ante altare sanctae crucis in navi ecclesiae; . . . et aliam ante altare beati Pauli et crucifixi imaginem, ad quam devocionis causa ad orandum pedesque illius osculandos plebei per gradus ex una parte scandere et ex alia parte descendere consueverant; atque terciam ante vetus altare beatae dei genetricis Mariae; quartam vero coram altare sanctae trinitatis; et quintam coram altare beati patris nostri Benedicti."

(4) before the altar of the Holy Trinity;

(5) before St. Benedict's altar.

Now this is "ancient custom", belonging to the Norman church before its eastern portion was pulled down; and it is custom which is to rule the future. But we note a reference to something which the people "used to do", as though they could do it no longer.

Here, then, we have a list of the most important altars of the Norman church after the altar of St. Peter. Let us take these altars in turn.

1. The altar of Holy Cross in the nave. We had assumed the existence of this altar; and the proof of its existence carries with it the *pulpitum* with its two doors and the rood-beam and rood above it.¹

2. Where was St. Paul's altar, and the crucifix, to kiss the feet of which the people went up by steps on one side and came down on the other? I suggest that the crucifix was in the gallery of the north transept, and that St. Paul's altar was in the apse close by. Turret staircases in the north-east and north-west corners would provide the way up and the way down; and the north part of the church being furthest removed from the monastic buildings could without inconvenience be made accessible to the public.²

3. The old altar of St. Mary. A new Lady Chapel had been begun in 1220, a quarter of a century before the Norman church was interfered with. It had its own special *custos*; but the old altar remained under the charge of the sacrist. Where then was it? I should look for it on the north side of the church, if only because there certainly was a chapel of the Virgin with a wonder-working image by the north door in the fourteenth century.³ If we place the old altar of St. Mary in either of the apses on the ground floor on the north side, we shall again be meeting the needs of the general public.

4. The altar of Holy Trinity. We have a curious notice of this altar in the Customary (p. 240, and also in the transcript, p. 451). It used to be the custom for monks who had been bled (*minuti* or *sanguinati*, as they are called)

¹ The word *pulpitum* is used in various senses. I consider that the use of it for the rood-screen with its two doors and altar between, as distinguished from the quire-screen with its one door, is justified not only by the language of Gervase (Rolls Series 73, i. 9, 10), but also by the following passage relating to Bury St. Edmunds (M. R. James, *Camb. Antiq. Soc. Communications*, xxviii. 178): "A penitent under *gravis culpa* . . . pergit in ecclesiam usque ad magnum hostium chori, scilicet in medio loco inter pulpitum et predictum hostium, et ibi debet sedere super magnum scamnum" (comp. *Rites of Durham*, 33 f., "under the said loft by the wall there was a long forme which dyd reche from the one Roodedore to the other").

² So at St. Albans (*Gesta Abbatum*, Rolls Series 28 [4], i. 287) the old cross, etc. which had been in the middle of the church, being removed when new ornaments were made, were placed "in ecclesiae nostrae parte aquilonari, ad laicorum et omnium illic adventantium aedificationem".

³ Cf. Indulgence (D. [= Westminster "Domesday"], f. 432): "capella ad ostium boreale . . . et imago virtuosa ejusdem virginis."

to say "the three prayers" on the way to matins, each as he happened to arrive before the altar of Holy Trinity: "and so they should now," adds the Customary. Then they pass on to the altar of St. John Baptist, or some other more convenient place assigned for the purpose, to say matins; but they do not begin the fifteen psalms till the brethren have begun them in the quire. I cannot locate either of these altars: but I may add some information as to one of them.

In the thirteenth century there was a tradition that it was before the altar of the Holy Trinity that St. Edward had his vision of the drowning of the King of Denmark. King Henry III. made a grant of a candle of one pound of wax from a tenant in London, to be rendered annually "on the vigil of the translation of Saint Edward, which is a fortnight after Michaelmas, for the altar of Holy Trinity, where the same Saint Edward saw the king of the Danes drowned".¹ The warrant is dated at Woodstock, 27 August, 1246; that is, more than a year after the pulling down of the Norman church was begun.

Now the earliest authority for the legend about the Danish king is Osbert's *Life of St. Edward*, which he wrote in 1138 before he went to Rome in his vain attempt to secure the Confessor's canonization. Osbert relates the vision early in his book as occurring in the church of St. Peter on Whit-Sunday, when the king was present in full state (*agebat in sceptris*). He fixes the time in his elaborate way by saying: "about the hour when the Saving Victim of the Paschal Lamb was being received by the people." He does not name the altar, but we can hardly imagine that any but the high altar is intended.²

The fact is that in Osbert's day not this, but a yet more notable vision belonged to the altar of the Holy Trinity, the vision which Edward and Leofric had together of the child Christ in the Blessed Sacrament. For this, again, Osbert is our earliest authority; and he begins his story with the words: "Once upon a time the aforesaid Prince was in the church of Westminster at the altar of the Holy and Undivided Trinity."³

But however the legend may have shifted, it is plain that in later days the altar of Holy Trinity was held in special reverence in the belief that before it the saint had seen one of his most remarkable visions. It was somewhere in the Norman church, for the sacrist had to keep a lamp always burning before it.⁴ How then could St. Edward have seen a vision before it, or even have been thought some eighty years afterwards to have seen a vision before it? It is conceivable that one or more altars in the new church were available for use

¹ D. f. 364: "ad altare sanctae trinitatis, ubi idem sanctus Edwardus vidit regem Dacorum submersum."

² Osbert MS., Brit. Mus. Add. MS. 36737, f. 142.

³ Osbert MS. f. 147.

⁴ I may add here that in King Henry III.'s time a certain rent was granted to the "procurator" of this altar by Master Simon of London (D. f. 373 b).

some years before the whole was dedicated. It is also conceivable that this Trinity altar had been actually transferred from the old church, on account of its special associations, to the new. But I can render no really satisfactory account of the matter, and I do not know of anything to show where in the yet later church the Trinity altar stood.

5. I pass on to the last altar on the list, the altar of St. Benedict. Here we have some highly interesting material from the Customary. Monks who are ailing, but not so ill as to have to leave the dormitory and go into the infirmary, are allowed for three days, or, in some circumstances, for as much as nine days, to be *extra chorum*, out of quire. They are to sit in silence with their psalters before the altar of St. Benedict while the convent is in cloister, and also during the day-hours and the masses. They are to listen to the convent saying the hours, or, if they prefer, to say them privately with the *minuti*, or bled monks, if there be any. They have meals in the infirmary, but may not miss Chapter or Collation. They are to hear compline before St. Benedict's altar, and to say the three prayers there, and wait for the brethren to come out of quire and fall in at the end or else in their proper rank.¹

Similar regulations are given, with appropriate variations, for monks who have been bled; and, more particularly, they are ordered during certain services to sit *ad librum minutorum ante altare sancti Benedicti*.² This is the Seyny Book, which I have discussed elsewhere.³ We are now only concerned with St. Benedict's altar, which was a kindly refuge for monks who were temporarily disabled from taking their full share in the services of the choir.

Where, then, was St. Benedict's altar? There can be little doubt that it was in the south transept. If we place it in the apse below the gallery, it would be close to the place where St. Benedict's chapel is to-day.

We may now spend a few moments in locating the earliest royal tombs.⁴ King Edward died on 4th January, 1066, and was buried the next day.⁵ We are

¹ Customary, transcr. pp. 425, 428 (cf. i. 297, 299); also ii. 239. I give parallel references to vol. i, the St. Augustine's Customary, where the Westminster Customary is not printed. At St. Augustine's the altar of St. Gregory held a corresponding position, and the altar of St. Benedict corresponded to the altar of Holy Trinity at Westminster.

² Customary, ii. 239, 241 ff.; transcr. p. 453 (i. 316).

³ *MSS. of Westminster Abbey*, 9-12.

⁴ In the old church Harold Harefoot had been buried, but he was dug up almost at once by his brother Harthacnut (Anglo-Saxon Chronicle, *sub anno* 1039).

⁵ I follow the earliest authority, the contemporary *Vita Edwardi*, which places the death "pridie nonas Januarii" (p. 434); as also does Osbert (MS. f. 153). This harmonizes with the fact that the feast of the "Depositio S. Edwardi" was kept on 5th January. But the Anglo-Saxon Chronicle says that he died "on Twelftan æfen", and was buried "on Twelftan dæg". So, too, William of Malmesbury (1124) places the burial on 6th January, "die Theophaniae" (*Gesta Regum*, Rolls Series 90, i. 280); and

told that he was laid in front of the altar of St. Peter.¹ This must mean within the presbytery, for the quire with its matin altar was under the tower. Osbert, after he has told the tale of Wulstan striking his staff into King Edward's grave-stone, adds that in consequence of the miracle, "William the conqueror of the English fashioned a shrine of gold and silver which to this day overshadows and covers his glorious body."²

In 1075, says the Anglo-Saxon Chronicle, "Eadgyth the lady died seven nights before Christmas, at Winchester: she was the relict of King Edward, and the king had her brought to Westminster with great worship, and laid her by King Eadward her lord." For her too, as William of Malmesbury tells us, "the Conqueror made a costly tomb of silver and gold."³

On 1st May, 1118, the "good queen" Maud died at Westminster, and was there buried.⁴ A letter of Pope Innocent II. to her brother David, King of Scotland, speaks of her as lying "in sacrario".⁵ A passage of the Customary (p. 45) shows that Queen Edith was buried on the north side and Queen Maud on the south side "in presbyterio"; and that by ancient custom a lamp had been kept perpetually burning at the tomb of each, until King Henry III. made a modification of this arrangement. Queen Maud's lamp had been provided for by a grant of one obol daily from King Henry I.⁶

It seems reasonable to conclude that these three tombs were in the first bay of the presbytery: that of King Edward being in the middle, and those of the two queens near the wall on either side.

Ordericus Vitalis gives "nonas Januarii" as the day of death (ed. Le Prevost, ii. 118). Flete likewise says: "obiit nonis Januarii in vigilia Epiphaniae domini" (p. 82); and he is followed by Widmore and Stanley.

¹ *Vita Edwardi*, p. 434, "coram altare beati Petri"; Sulcard MS. f. 16 b, "ante ipsum altare principis apostolorum"; Osbert MS. f. 153, "secus altare beati Petri apostoli."

² Osbert MS. f. 156: "qua de causa triumphator Anglorum Willelmus super sanctum regem Edwardum ex auro et argento capsae fabricam condidit, quae utique in hodiernum diem in ecclesia beati Petri apostoli gloriosum corpus obumbrat et tegit."

³ *Gesta Regum*, Rolls Series 90, i. 332: "quae apud Westmonasterium studio ejus [sc. Willelmi] prope conjugem locata habet tumbam argenti aurique expensis operosam."

What is called the First Charter of William I. contains the statement that on his first visit to the abbey the Conqueror laid two precious palls on King Edward's grave (D. f. 51 b): and in reference to a later occasion it says (D. f. 52 b): "et quia macerias [= enclosure-walls?] ecclesiae maxima ex parte jam imperfectas esse cognovi, ad perficiendum quod in illa residuum fuerat centum libras argenti devotus optuli. Itaque ob reverentiam nimii amoris quem erga ipsum inclitum regem habueram, tumbam ejus et reginae juxta eum positae ex auro et argento fabrilis opere artificiosi decoris mirifice operiri feci." The charter is dated 1067, but the queen did not die till 1075. Yet, though not a genuine document, it may contain a true tradition on these points.

⁴ Anglo-Saxon Chronicle.

⁵ D. f. 165.

⁶ D. f. 363 b.

Notes on the Plan of the Confessor's Church.

For the accompanying plan (plate XIII) I am indebted to the skill of Mr. A. G. Wallace, who has taken immense pains in working out my conception of St. Edward's church and in showing its position relatively to the existing buildings.¹ Some notes by way of explanation and justification are here given: but it will be obvious to any one who has experience of such conjectural reconstructions that many points of detail might quite reasonably be treated in a different way from that which I have suggested.

The actual remains of the Norman church are no more than the three bases underneath the pavement of the presbytery and the curve of the foundation of the apse which has been found since the above paper was written. These are shown in plate XIV.

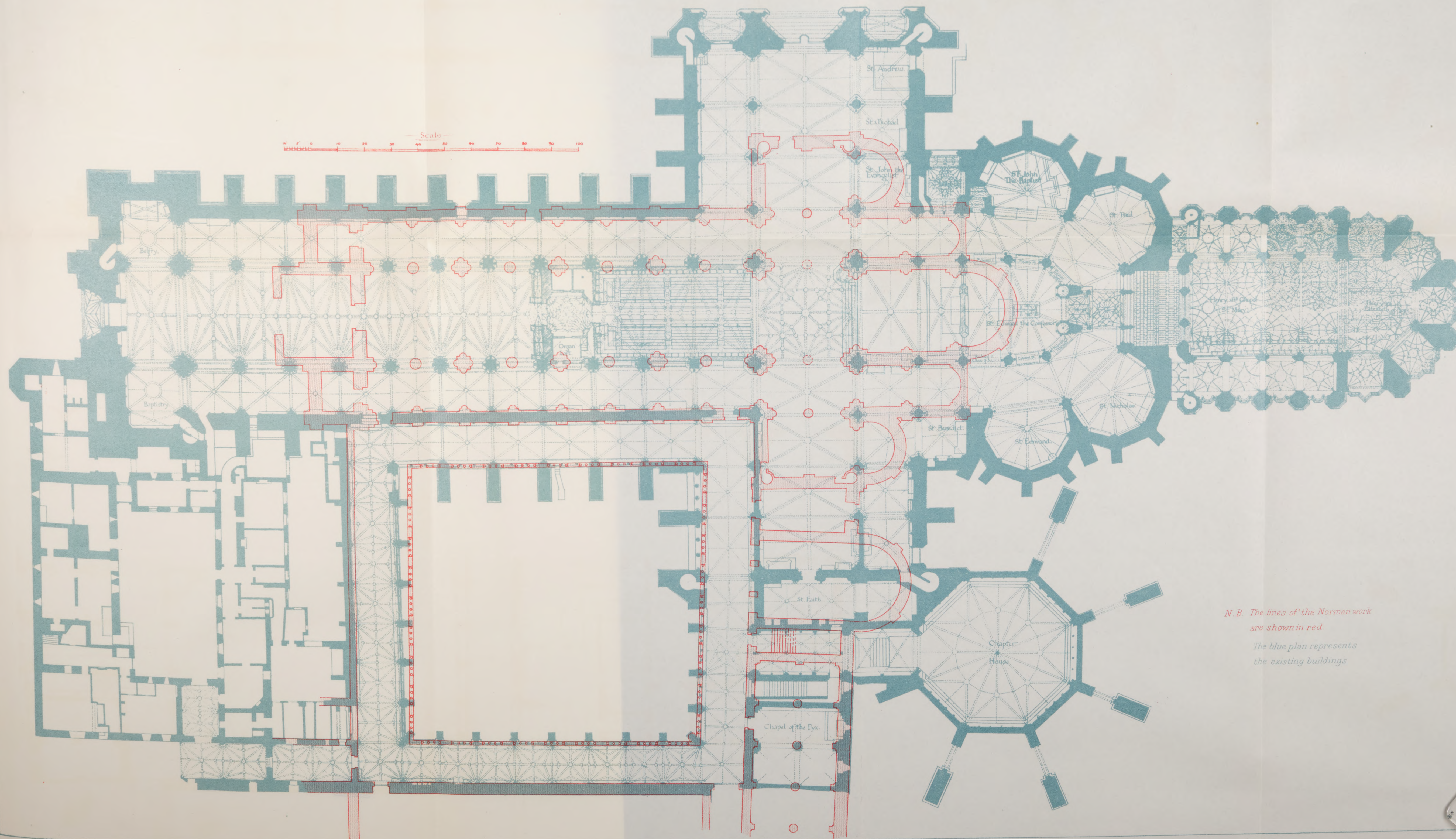
But other portions of the Norman buildings remain, which are of great importance in deciding the extent of the church itself. Last year excavation in the cloister garth revealed the line of the western arcade of the Norman cloister, just east of the present arcade and diverging from it more widely as it approaches the church. We thus learn that if the cloister walk had been left where it was, a great buttress of the new work would have come in the middle of it. So it had to be shifted westward to avoid this; and yet it had still to reach the frater door at the southern end. The old line of the arcade is now marked by stones embedded in the grass.

The change thus made was a serious one; for it necessitated the demolition of the cellarer's buildings, which formed the western boundary of the cloister, occupying the same position as the fine *cellarium* which we still admire at Jumièges. Abbot Litlington erected new buildings for the cellarer in the range which now bounds the eastern side of Dean's Yard.

The south walk of the cloister is still bounded by the Norman wall of the frater, the Norman arcading being visible on its southern face. The undercroft of the Norman dormitory gives us the eastern boundary of a part of the east walk; and it can easily be seen that this is not in line with the new work of the transept beyond the entrance to the chapter-house.

Since the foregoing paper was written, M. Roger Martin du Gard's interesting book on Jumièges has come into my hands. He shows that the

¹ A preliminary sketch was made for me by the Rev. R. G. Parsons, Fellow of University College, Oxford, who went with me to Jumièges at Easter, 1909, and to whom I owe valuable suggestions. I have used as the groundwork Mr. J. H. Cheadle's excellent new plan of the existing church.

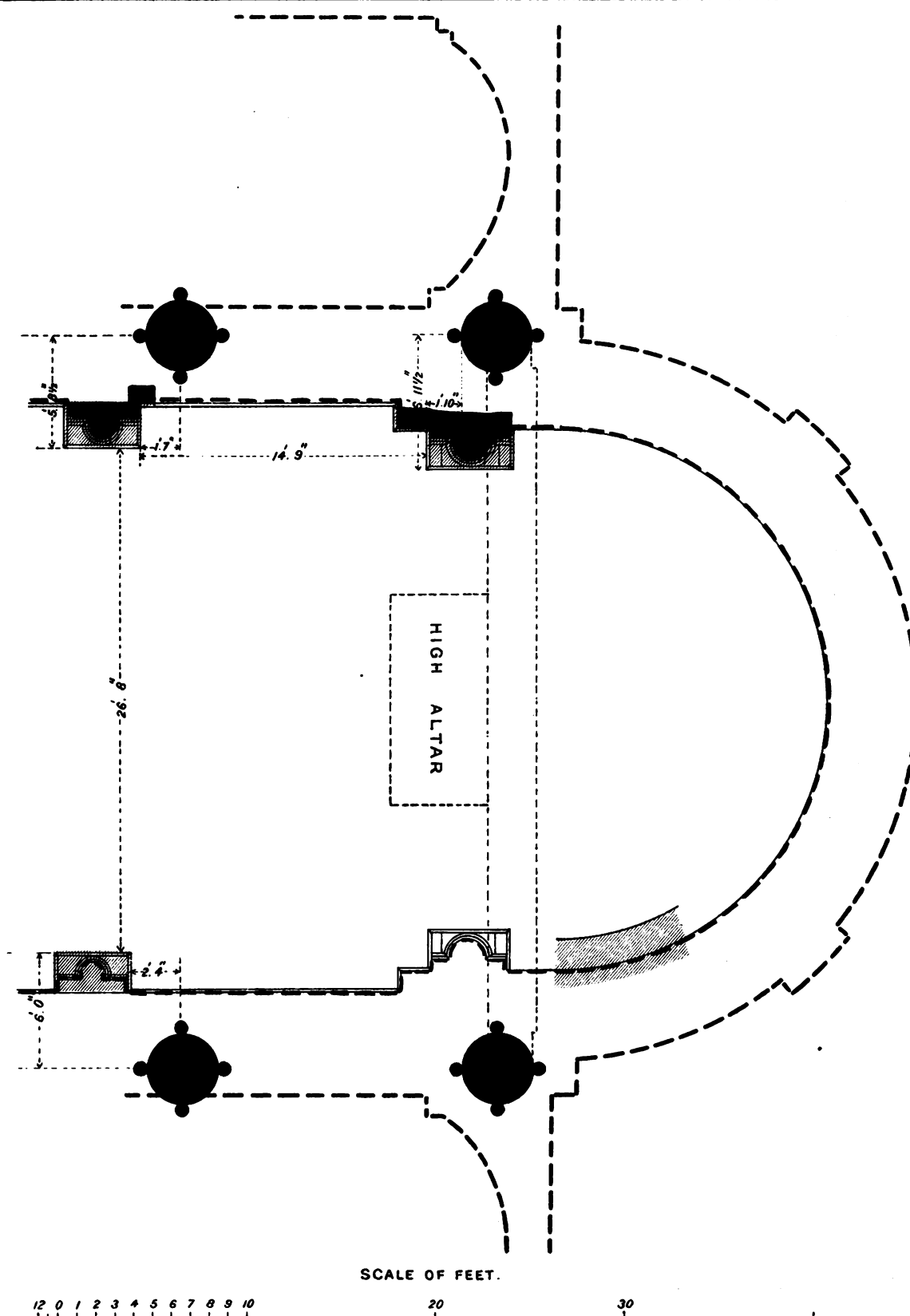


*N.B. The lines of the Norman work
are shown in red.*

*The blue plan represents
the existing buildings*

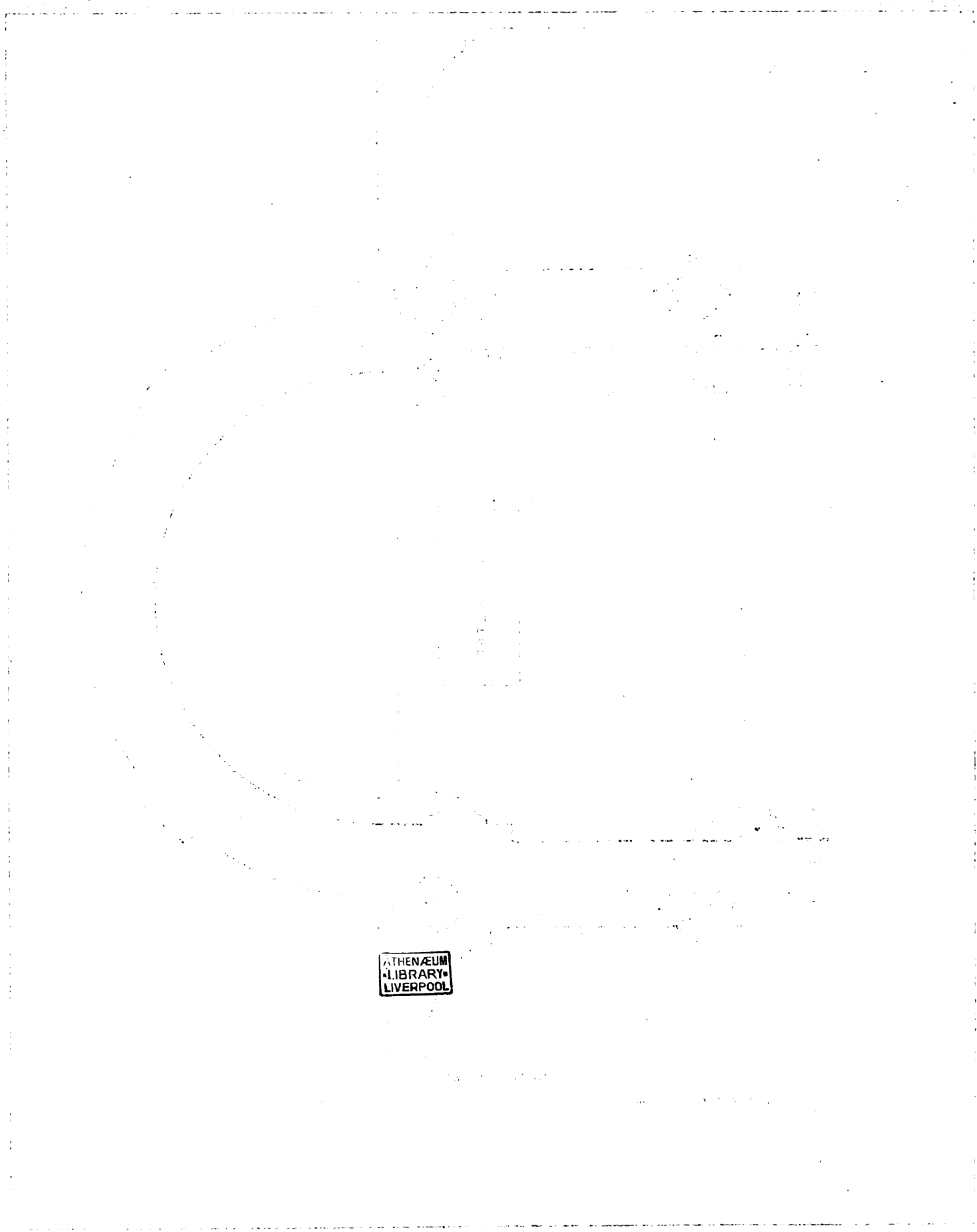
WESTMINSTER ABBEY,—PLAN SHOWING RELATIVE POSITIONS OF THE CHURCH OF EDWARD THE CONFESSOR AND OF THE EXISTING CHURCH.

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WESTMINSTER ABBEY, PLAN OF THE NORMAN BASES OF THE PRESBYTERY OF EDWARD THE CONFESSOR'S CHURCH.

Published by the Society of Antiquaries of London, 1910.



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gallery in the transept there came right out to the line of the arcade of the nave, covering the space between the aisle of the presbytery and the aisle of the nave. It may have been so at Westminster, for such an arrangement will suit quite well the phrases of the Latin description. But I have left my plan in this respect as it was, keeping to the type of Lanfranc's churches at Caen and Canterbury, of St. Nicholas at Caen, C  risy, St. Georges de Boscherville, etc. M. du Gard does not mention that traces of the arrangement which he has discovered at Jumi  ges were found when restoration was in progress at the cathedral of Bayeux.¹

I have placed a spiral staircase in each corner of both transepts. This helps to explain the *cocleis plurimis* of the ancient description, though the words might possibly mean no more than the many windings of a kind of staircase which was new to the writer. But I had other reasons. In the first place I thus got a satisfactory place for St. Paul's altar and the crucifix, to kiss the feet of which the people went up by steps on one side and down on the other side. Moreover, though the transepts have been lengthened and widened, they still have staircases in each of their corners, a remarkable superfluity which is not easily to be paralleled elsewhere. Is this a piece of conservatism in planning on the part of King Henry III.'s builders?

Let us now come to the nave, and consider first its width and then its length. I have made it nearly as wide from wall to wall of the aisles inside as the present nave is, allowing somewhat greater thickness to the Norman walls. It may be said that this does not accord with the measures of the presbytery, and that the presbytery aisles are shown too wide. I may be wrong; but measures which I have quoted in a note at the beginning of my paper incline me to this view, although the nave of Jumi  ges is narrower.

I have made the nave eight bays in length, four double bays with piers and pillars alternating, as at Jumi  ges and in several other early churches. The east side of the porch and towers is thus nearly in line with the west side of the western walk of the cloister, as at Jumi  ges and in St. Stephen's at Caen. This shortening of the nave is contrary to the view of the late Mr. Micklethwaite, who had even surmised that Norman work might still exist in the core of the present western towers. It must be remembered, however, that Mr. Micklethwaite proceeded on the supposition that St. Edward did not complete his church, but left the old Saxon church still standing to serve for the time as the nave. If, as I believe, this supposition is no longer tenable, the

¹ Bouet, *Clochers du dioc  se de Bayeux*, 40, where reference is made to *Description des travaux de reprise en sous-  uvre de la cath  drale de Bayeux* par MM. H. de Dion et L. Lasvigne (Paris, Morel et C^{  }, 1861).

shortening of the nave has two advantages; for it makes it more easy to place its completion within St. Edward's lifetime, and it leaves the more room for the Saxon church between the Norman west front and the Long Ditch, a distance which may be reckoned as from 300 to 350 feet.

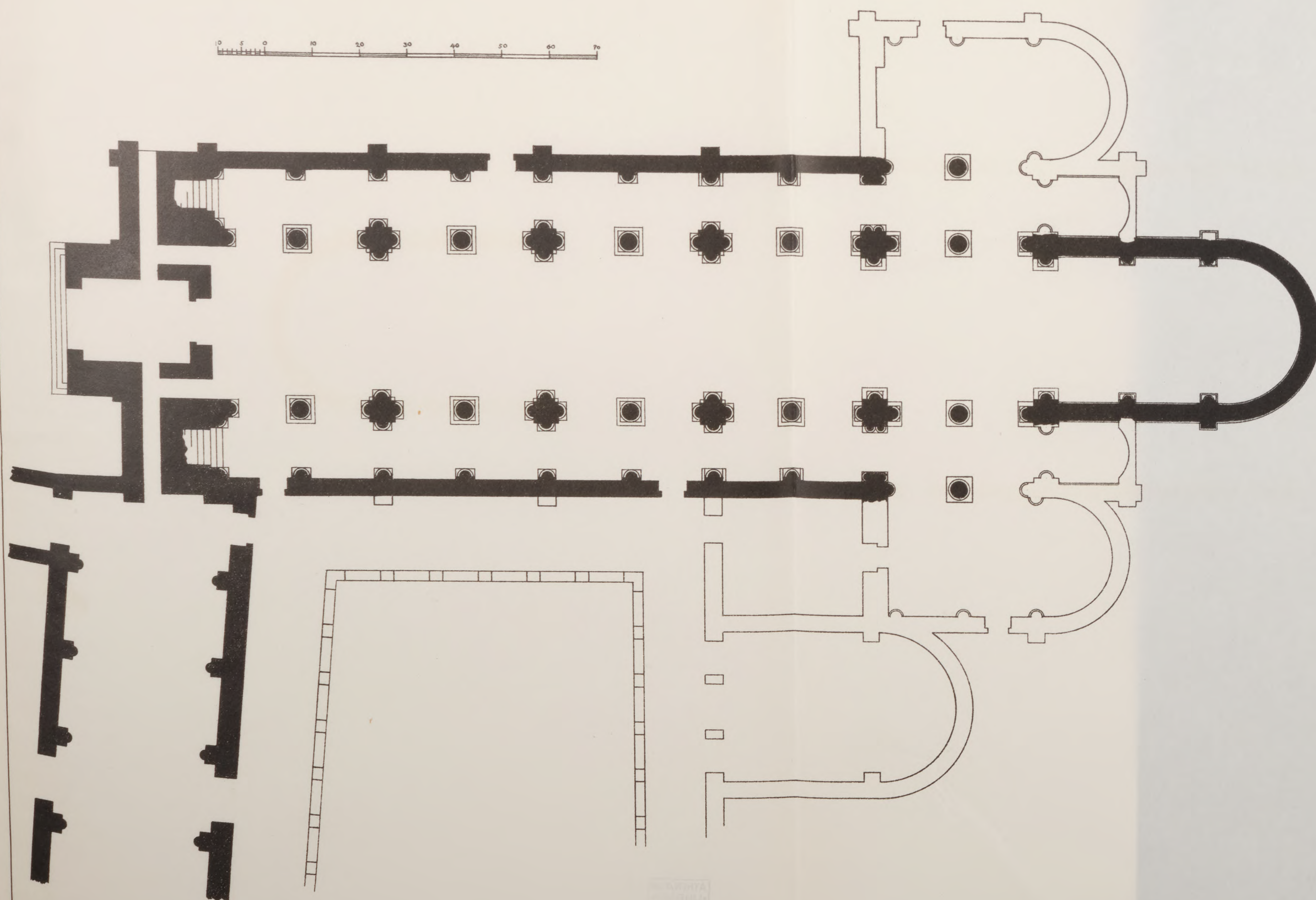
I take this opportunity of calling attention to a set of corbels on the outside of the eastern wall of Jerusalem Chamber, which seem to point to the existence of a covered passage east of that chamber at the end of the fourteenth century, leading from the Abbot's courtyard. These corbels show conclusively that when Jerusalem Chamber was built (1375) the towers did not stand as far west as they do now. This observation, which I made in April, 1909, first shook my faith in Mr. Micklethwaite's opinion as to the position of the Norman towers.

Note on the Plan of the church at Jumièges.

So great appeared to be the importance of Abbot Robert's church at Jumièges in its bearing on St. Edward's church at Westminster, that after a careful study of M. Martin du Gard's valuable book I visited it again in April, 1910. Through the very kind offices of M. du Gard I obtained full leave to photograph and take measurements. Mr. Wallace has drawn for me a plan of the Norman work (plate XV), on a larger scale than M. du Gard's plans, from fresh measurements which he took with the kind assistance of Mr. Gladwyn Turbutt. The outlined portions of this plan represent either parts which have not been measured again or else conjectural reconstructions.

There is a curious irregularity both in the measures of the piers of the nave and in their distances from the pillars next to them. It may also be noted that the bases of the western towers extend slightly further to the east than the eastern face of the great porch. This and some other observations led us to question the theory of the priority of this portion of the church to the nave.

M. Martin du Gard's conjectural restoration of the aisles of the presbytery was the result of excavations and soundings made by him which it was not possible for us to test. It is only with great hesitancy that we have placed the aisle-apses a bay further west than his plans indicate; for indeed the arrangement which he has suggested is the most common in Norman churches of this type. But a difficulty arises from the fact that the moulding of the plinth of the eastern buttress on the south side of the presbytery is continuous, and goes on both east and west on the outside of the wall. This would be right for an external buttress, but seems incompatible with an apse to an aisle at this point.



PLAN OF THE ABBEY CHURCH, ETC. OF JUMIÈGES.

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We have therefore placed the aisle-apses further west: not with any feeling of certainty, but in order to call attention to the curious problem which this moulding suggests. It is possible that the foundations which were discovered may have belonged to some of the later work: and it is much to be desired that more complete excavations may be undertaken, in order to discover, if possible, what the original arrangement really was.

I am so grateful to M. Martin du Gard, both for his book and also his personal friendliness, that I am very unwilling to appear as his critic: but these observations are necessary in order to explain the very unusual reconstruction suggested by our plan. I am glad to have this opportunity of paying a tribute to the great care and expense bestowed by the present proprietress, Madame Lepel-Cointet, on this precious monument of Norman architecture.

*Note on the existing remnants of the Confessor's Church. By Professor
W. R. LETHABY, F.S.A.*

In 1866 Sir Gilbert Scott discovered the remains of three ancient piers beneath the presbytery floor on the occasion of his laying the marble extensions to the mosaic pavement. He thus referred to them in one of his lectures published in 1879. "We have recently discovered beneath the pavement of the altar-space the bases of two (*sic*) of the great piers of the sanctuary. From which we found that they were clustered, not unlike those of St. Stephen's at Caen. The bases consist of double hollows precisely like one from that church. The work is by no means so rough as that common in early Norman buildings."¹ It seems that Scott meant isolated piers when he spoke of the "great piers", not wall-piers, although at St. Stephen's the piers in a similar position were attached to a wall which enclosed the presbytery. In any case, the remnants do not seem to have been closely scrutinized or planned; for it was not pointed out, that of the two stumps of piers on the north side, the more eastward one had an additional break on its western face, and projected further into the area of the presbytery, so that the clear space between the eastern piers on its opposite sides must have been fully two feet six inches less than the space between the piers further to the west.

Mr. Micklethwaite described the remnants more particularly thus: "They are the inner parts of the bases of the piers which separated the choir from the aisle which went around it. They were left when the rest was hewn away to

¹ The third remnant is only a plinth stone. It is remembered that the fourth, opposite to the eastern one on the north side, was sought for, but nothing was in place.

make room for the foundation of Henry III.'s work. The piers have been such as we find in other churches built within the eleventh century, as, for example, Blyth, Nottinghamshire, where, as here, we have the square wall-pilaster with a round shaft in front of it and the base mould of the shaft continued along the face of the pilaster, but stopping with the section at its sides."¹ This description was illustrated by a perspective sketch of the west side of the eastern pier which has the extra break, and hence looks more like part of an isolated pier than does the other further west, which consists only of a wall-pilaster with a bold half-round shaft in front. Attention was called to this difference only in these words: "The eastern of the two old bases on the north side, though parallel with the western, is twelve inches nearer to the centre, which is more than could well come from mere irregularity in setting out."

After I had observed the difference between the two piers on the north side it seemed obvious that the one to the east must have been one of the responds to the arch opening to the apse, and a comparison with a series of early Norman plans fully confirmed this view. It was natural at a time when the ambulatory type of plan was better known than that of the closed-in presbytery, and when the general sequence in the development of Norman plans had not been worked out, to assume that the fragments belonged to isolated pillars instead of to wall-piers, yet the fact that just these parts remain which would represent piers attached to walls rather than isolated pillars, goes far to prove that such they were; further an alternation in size in isolated pillars, made up of grouped members, would be very remarkable at so early a date, especially in the short length of a presbytery.

Access to the stumps of masonry is made possible through trap-doors, 18 inches square, but the space round about them is so confined, and the evidence has been so obscured by the new masonry forming the pits and by the concrete filling under Henry III's pavement, that it is, perhaps, impossible to say whether any part of an early side wall still exists. One small point, however, in favour of such a wall, is that a chamfered stone on the eastern side of the west pier is so shallow that it suggests the plinth to a continuous wall rather than a block under a pier. Although the positive evidence is enough to show that the Confessor's presbytery was closed after the second bay by an apse with a continuous wall, it may be allowed that there is not proof, direct and absolute, that the two bays of the presbytery may not have had arches communicating with the lateral aisles, but analogy with a series of plans, generally similar, shows that the side walls of the presbytery were probably solid, as, to take a well-known example, were those at St. Albans.

¹ *The Archaeological Journal*, March, 1894.

The floor of the Confessor's presbytery was about 4 ft. 6 in. below the present high level by the altar, and of the eastern pier three courses of masonry (together 3 ft. 3 in. in height) are left. The masonry is of Reigate stone, accurately worked, and large in scale, the semicircular attached shafts having a diameter of 1 ft. 8½ in. The surface seems to have been covered with lime-wash. The clear space between the plinths of the two piers on the north side is 14 ft. 9 in., and the western or normal pier is 4 ft. wide at the plinth. This suggests a dimension for the ordinary bays of 18 ft. 9 in. from centre to centre. The width of the presbytery between the plinths of the two western piers is about 26 ft. 8 in., and between the plinths of the two eastern ones would have been about 24 ft. 2 in.¹

After the Dean had read his paper I obtained his permission to search for traces of the apse under a piece of modern pavement just to the east of the south door in the reredos. We found that under the pavement of the Confessor's Chapel the ground had been made up for several feet by a filling of stone chips, the waste from a mason's yard. On digging to a depth of 5 ft. 8 in. through this filling, we reached the flat surface of a hard mass following a concave curve tending east and north. We exposed the top surface of this so far as seemed safe, and found that its width extended more than 3 ft. towards the south-east: how much wider it was cannot be said. We now dug deeper along the curved front of this hard mass and found that it was a foundation-wall of concreted rubble largely of flints. The upper surface of what remained was in part covered with broken Roman tiles which may have been laid as a bond course, but not enough tiles were found to make this certain. A total depth of 7 ft. 8 in. was reached, and here we seemed to come to undisturbed sandy loam. This level is 2 ft. 4 in. below the ambulatory floor. The height of the foundation thus exposed was about 2 ft.

On laying down a line for an apse following the measurements taken by the Dean at Jumièges, it was found that this line corresponded with, but was of larger radius than, the curve of the foundation, so that the latter must have projected about 1 ft. 6 in. from the surface of the apse wall.

The foundation was traced for about seven feet, and then it was judged to be inadvisable to mine under the floor any further. The excavation has now been walled round in such a way that the foundation may be examined again at some future time if it is desired, but this cannot easily be done as the pit is covered by a heavy stone.

In digging the hole several large pieces of Roman tiles (bricks) were found, also one fragment of a Roman roof-tile with flanged sides, and some lumps of

¹ Mr. Wallace has kindly given me these dimensions.

a floor of *opus signinum*, that is, of mortar and broken tile, about three inches thick. Other portions of a similar destroyed floor have been discovered before in making excavations in the nave, and it may be put on record here that there is in our collection of fragments part of a Roman flue-tile, $6\frac{1}{2}$ in. wide, and scored in the usual way on the surface thus + and thus × like a Union Jack. It is evident that there must once have been an important Roman building on the site.¹

¹ See vol. i of London in the Victoria County Histories.

VI. *On the Use of the Deer-Horn Pick in the Mining Operations of the Ancients.*
By HORACE W. SANDARS, Esq., F.S.A.

Read 24th February, 1910.

IMPLEMENTS fashioned from the antler of the red deer have long been known to have formed part of the tools with which primitive man and his successors in much more recent times carried on the varied industries that claimed his care and skill, enabling him to turn to good account the many products of soil and chase which thoughtful Nature had placed at his disposal. Almost every part of the antler was utilized; the tines being removed in order to form gouges, punches, hand levers, and piercing instruments, while the beam, when deprived of its tines, was cut up into sections from which adzes and such-like cutting implements were formed, or hammers were devised. A useful instrument which served as a rake, or scraper, was made from the branching points at the cup; while a clever combination of beam and tines produced a tool which served the double purpose of pick (or lever) and rake (or scraper). Much ingenuity was shown in devising and considerable skill in forming such implements, but in no case is this more evident than in that of the deer-horn pick. Generally speaking, the pick was formed from an antler by severing the cup end and removing the bez

and the trez tines, thus leaving the beam to form the haft and the brow tine to form the pick (fig. 1), while the burr remained in position in order to give strength to the weakest part, the angle of intersection between the handle and the "blade", and to add weight to the blow. The "false brow", or undeveloped bez,



Fig. 1. Deer-horn pick found at Silchester.

was sometimes left in place (plate XVI, no. 1), but this was rather the exception than the rule. The upper portion of the beam or the longest point beyond the "cup" was often left in position to form an elongation of the shaft which assisted greatly in directing the blow, while it added very materially to the leverage of the pick. Fig. 1 offers a very good example of a double-handed pick with an elongated shaft, and with blunted point and stem worn smooth by usage.

Both shed antlers and those from the heads of slain deer were made use of; and although the use of the former may have been the rule, I am inclined to the opinion that the class of antler utilized depended much upon the locality where these tools were made. The antlers of stags of different ages were brought into service, but, generally speaking, those from fully grown animals were preferred. The red deer, the *cervus elaphus* of neolithic and even of much later times, had far finer heads than the red deer of to-day, and some picks, as I will show later on, must have been from antlers of colossal size. Irregular growths of the trez tine were cleverly utilized to form implements which could be adapted to special purposes. Some picks were intended to be used with one hand, while others required two hands to wield them, and others again were specially adapted for usage by both hands in confined and narrow places. Double-handed picks form a special feature of the tools from the flint-mines near Beauvais in France.

Practically all the deer-horn implements which I have mentioned were utilized by miners in ancient times; but especially by miners for flint, as I will proceed to show.

It is only within recent years that attention has been directed to mining operations in the Stone Age, and this probably accounts for the comparative paucity of sources of information on this interesting branch of archaeological study. The countries in which research has been made into this special but important subject are confined, in so far as I am aware, to Belgium, France, England, and the United States of America.¹ I have named them in the order of their importance with regard to the extent of the investigations carried out and of the publication of the results obtained; but I have no doubt that further research would show that many other centres of neolithic mining activity exist, and that there are numerous other sites, even in our own country, where the industry was carried on. Indeed, it is probable that closer investigation will show that the so-called "Dene-holes" were, in many instances, but neolithic flint-mines. There is no proof that flint nodules were mined in paleolithic times, and it is only during the later neolithic period that distinct and incontrovertible evidence of systematic mining operations by primitive man can be found. I use the word "systematic" advisedly, because investigation over a somewhat wide field of research has shown that mining in neolithic times was conducted on the same fundamental principles that regulate similar operations at the present day. The industry may be divided into two main groups, viz. mining by "open cast", and mining by shafts and galleries. There is one other main principle in mining which the ancients followed. They located the "vein"

¹ I make no further reference to the United States as I am not aware that implements of deer-horn have been found in the ancient flint-mines in that country.

"at surface" and followed it down, either as I have already mentioned, by opening trenches on the back of the vein or deposit, or by sinking shafts and driving galleries. They carried into effect the true practice of mining still further, for when sinking their shafts they did so with a definite object in view, viz. to reach a certain bed of flint which gave them the product best adapted to the manufacture of the particular objects to which it was to be applied. They knew beforehand how far they would have to sink, and while sinking they passed through and neglected the several layers of flint which they knew to be inappropriate to their purpose; just as, in our times, a miner for coal would know the depth to which he would have to sink his shaft before he started operations, and would neglect the minor or inferior-quality seams which he might meet on his way before reaching the main seam which it was his primary object to attain.

Perhaps the best example of flint-mining by "open cast" is to be found at Obourg in the province of Hainaut, Belgium, where several of the ancient trenches were examined by M. E. de Munck in 1880-1886 (1).¹ A typical example measured 5 metres (16.4 feet) in length, by 6 metres (19.6 feet) wide at the top, and from 4 to 5 metres (13.1 to 16.4 feet) at the bottom, while the depth was 3 metres (9.8 feet). Some of the trenches reached a depth of 4 metres (13.1 feet) in order to attain, in all probability, a particular layer of flint. They were of considerable length and their preparation must have entailed much labour in the removal of the overburden. The trenches were in close proximity to each other, and in some cases a communication had been established between two "open casts" by means of a gallery or tunnel, in order, most probably, to facilitate the working of the mine and the removal of the silex. In one instance, the tunnel measured 3 metres (10.8 feet) long by 1 metre (3.28 feet) high and 1 metre wide, but the latter measures must have been exceptional as, in another instance, the tunnel was of the more normal height of 70 centimetres (2 feet 9 inches) and 60 centimetres (2 feet) in width. The neolithic miner, like his successor of to-day, only did just sufficient work underground to enable him to get, and often with great discomfort, to where he wanted to go. The trenches had been filled in of old with the débris usual in such cases, viz. with blocks of chalk, sand, and clay (the "spoil" probably from the neighbouring trench), with which were intermingled objects in partly worked flint, bones of animals, much-worn deer-horn picks and other mining implements. The sides of the open casts showed unmistakable traces of the usage of these implements, a large number and a considerable variety of which were also found in the old workings. It is, however, a remarkable fact that mining tools made from flint do not appear to have been used in these mines, as they undoubtedly were in the flint-mines at Spiennes and elsewhere. Among the deer-horn implements found were pickaxes, single-

¹ These numbers, (1), etc., refer to the bibliographical references at the end of this paper.

(fig. 2) and double-handed (fig. 3); rakes (fig. 4); and a combined tool forming a rake at one end and a pick or lever at the other (fig. 5). The neolithic miner



Fig. 2. Single-handed deer-horn pick.



Fig. 3. Double-handed deer-horn pick.



Fig. 4. Deer-horn rake.



Fig. 5. Deer-horn rake and lever combined.

gave a "batter" or slope to the sides of the excavations in which he was working in order to ensure their stability; but that he was not always successful

in achieving his object is shown by the discovery of the skeleton of a miner in the ancient Obourg workings by M. E. de Munck in 1891. He was employed in driving a connecting gallery or "cross-cut", when he cut into a "pocket" of sand, or pot-hole, which "ran in" upon him and buried him with his tools (2). He was using, as was to be expected in view of the confined space in which he was working, a single-handed deer-horn pick, cut from the cup end of an antler which was very flat in the beam. The tines were well developed though somewhat irregular in form. Fig. 6 gives an illustration of this pick, which shows distinct signs of wear. It is possible that the bifurcating points had been left in place (cf. plate XVI, no. 6) and were broken off subsequently to the accident, as a complete implement of that form has been found in other workings at Obourg.



Fig. 6. Deer-horn pick found with the skeleton of a miner at Obourg.

I am indebted to Dr. E. Houzé of Brussels for the following description of this skeleton:

The Obourg man was sub-brachycephalic (c. i. 80.0) and platyrrhine; his stature, estimated from the long bones, was 1.55 m. (5 ft. 1 in.). Viewed in *norma verticalis*, the parietal bosses occupy exactly the same position as in the case of the brachycephals of the series which I examined at Hastière. The femur is platymeric, and has a hypotrochanteric fossa and a third trochanter. The tibia is platynemic and the head is retroverted.

I might mention here that the skeleton of another neolithic miner was discovered at Strépy, in Belgium, in 1905, accompanied by a child of about five years old. In this case the miner was working on a bank of dark flint nodules at the bottom of a trench about 3 metres (10 feet) deep, when the side gave way and buried the victims (2). A fine single-handed deer-horn pick still lay close to the miner's hand; and another deer-horn implement, probably used for levering up the nodules, was found close by; while a very good specimen of a two-handed pick, which the miner had evidently used, was discovered in another part of the trench. The bank of flint mined was the fourth from the surface, and the last in the chalk of the district. In this instance the cranium was decidedly brachycephalic, the lower jaws were powerful, and the teeth were worn to a flat surface, a characteristic of the neolithic populations of that part of Belgium. Some of the teeth had been destroyed by disease, which had even extended to and affected the bone of the lower jaw.¹

¹ These skeletons and the implements found with them are to be seen at the Natural History Museum in Brussels.

As was usual in such cases the mining activity at Obourg was accompanied by a separate industry, which consisted in working up the flint nodules at surface into different forms, and manufacturing therefrom the varied weapons and implements which are characteristic of the neolithic period; and traces of many of the sites of such "factories" have been found in the neighbourhood of neolithic mines. They afford at Obourg a very good example of the directness of purpose in the mining operations of the ancients, since it is evident that the bank of silex mined produced a flint peculiarly adapted to the manufacture of fine and long knives and of scrapers, but not to other implements, such as axes, etc. Indeed, one of the few polished axes found here proved to have been manufactured of flint from Spiennes (1, p. 349).

It is to Spiennes that we must turn for the best-known examples of neolithic mining, which have been so carefully examined and so often published that they may be said to have become historic. These mines were first noticed by M. C. Malaise (4 and 7) in 1866, who mentions that they were discovered while the very same bank of silex which was utilized by neolithic miners was being worked for the supply of a neighbouring pottery. The old galleries produced a large quantity of partly worked flints, as well as a deer-horn pick and parts of a human skeleton. It was only in 1867, however, at the time of the construction of the railway from Mons to Charleroi, that the neolithic mining district of Spiennes could be carefully studied and reported upon. This was done by MM. Cornet and Briard (5), and they were followed in 1887 by MM. Baron de Loë and E. de Munck, who again examined the field (6).

Neolithic mining was carried on at Spiennes by two distinct methods, viz. by means of galleries driven in from the sloping surface of the ground where it falls away to the river Trouille (10), and by shafts sunk from the surface of the plateau above (6). The galleries were driven in the chalk and on the upper surface of the bank of flints which formed the objective of these ancient mining operations, and outcropped on the side of the hill. They yielded the usual evidence of the period of their construction and the purpose for which they were made in the form of partly worked flints and of deer-horn picks. It is possible, and indeed probable, as MM. de Pauw and Van Overloop have mentioned, that these galleries indicate an earlier period in the development of the flint-implement industry than the shaft mines in the same district; and I venture the opinion that the proofs of age, when considered from a purely mining point of view, and as deduced from the evidence of the methods pursued, point to the conclusion that the open casts at Obourg preceded the galleries at Spiennes, and that it was only in later neolithic times that experience in mining and the knowledge of the conditions under which it could best be undertaken and safely carried on, led to the more scientific methods of sinking by shafts and of extend-

ing in all directions the underground workings. The shafts at Spiennes are scattered over a surface of more than sixty acres, almost entirely covered with the débris of the neolithic workshops, which is three feet deep in places. It has so rarely happened that such a large number of shafts has been disclosed in so relatively small a space that I reproduce in fig. 7 a section of the railway

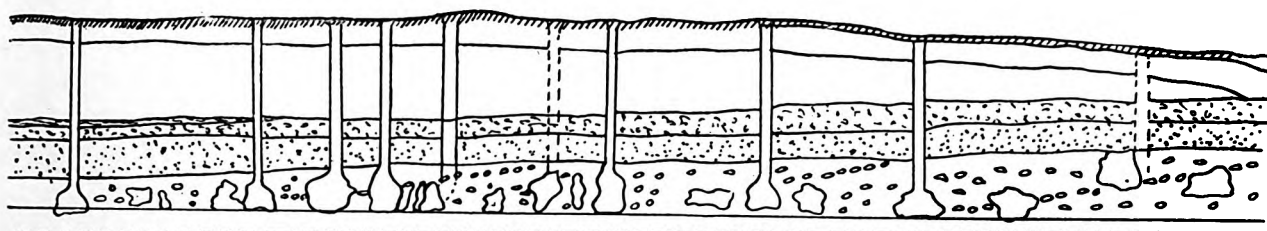


Fig. 7. Section of the eastern portion of the railway cutting at Spiennes, showing the position of the shafts and galleries. Scale, 1-500.

cutting at Spiennes, taken from the *Compte rendu* of the Congrès international d'Anthropologie et d'Archéologie préhistoriques, 6^e session, Brussels, 1892. This shows ten shafts, almost in line, and the galleries with which they were connected. The object in sinking these shafts was to attain the sixth layer of flint in the underlying cretaceous deposit, and the neolithic prospector proceeded on his task in a miner-like and eminently practical manner. He was quite well aware, from the evidence afforded by the old adit workings, that he would have to go down to the sixth layer of silex, which alone offered those properties of cleavage and qualities of texture which permitted of its being worked to good purpose after it had been won. He also knew that in order to reach that bank he would have to sink through a considerable depth of overburden, composed of quaternary and tertiary deposits, before he could expect to reach the chalk; and that his labour would not even then be finished, as he would have to continue to sink through harder material and through several layers of flint before he could reach his final goal. As a matter of fact he sank his shaft through

1.50 m. (5 feet) of alluvial deposits.

4.00 „ (13 „) „ quaternary gravels.

1.50 „ (5 „) „ a deposit of water-worn pebbles and débris, in which the remains of the mammoth and of the rhinoceros, as well as paleolithic implements, are found.

2.50 „ (8 „) „ tertiary greensand before reaching the chalk (5, p. 290).

9.50 „ (31 „).

At another spot in the neighbourhood the neolithic miner went through more than 10 metres (32.8 feet) of quaternary deposit before reaching the bank of flint

he was sinking for, which lay in this case on the top of the chalk, and the existence of which could not even be suspected at surface.

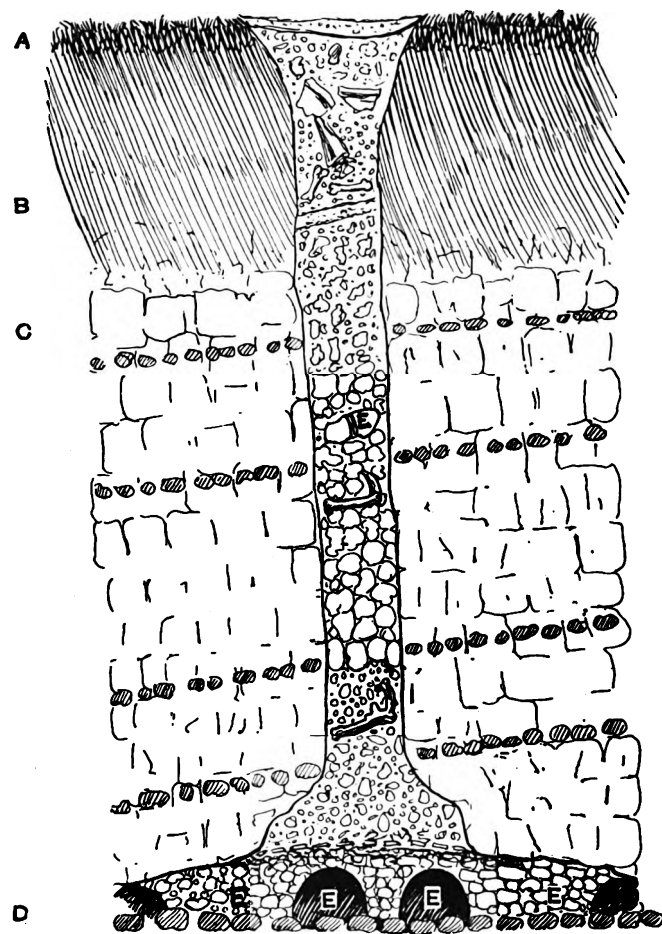


Fig. 8. Section of a neolithic shaft. Scale, 1-10.

would be continued until the fifth layer of flint (D) was reached at some 12 metres (about 40 feet) from surface. Here the exploitation, properly so called, of the mine would begin, the first operation being to widen out the bottom of the shaft so as to form a chamber E, about 1.20 to 1.50 metres (4 to 5 feet) high and about 2.50 to 3 metres (6.5 to 10 feet) in diameter. It is from this chamber that the different galleries or workings radiated. The orifice of the shaft was also widened out to about 2 metres (6.5 feet) and the sides, for a short distance down, were given a batter in order to facilitate work at the top of the shaft and to lessen the risk of the ground becoming detached and falling on the men below.

The sides of the shaft were not always parallel nor were they always vertical, but it is indeed remarkable how even and straight they were frequently made. The neolithic miner who was occupied in shaft-sinking worked in a very confined

Fig. 8 represents a typical shaft as sunk under the conditions that prevailed in Belgium and elsewhere on the Continent, and in accordance with the mining principles of later neolithic times. The practice in Britain, as I will show later on, appears to have differed in detail, and points, I think, to somewhat less advanced methods of mining. The usual procedure was as follows: operations were commenced, at a convenient point at surface, by making an excavation as nearly circular as possible, about 80 centimetres (32 inches) to 1 metre (39 inches) in diameter, through the surface soil (A), which is supposed to be 50 centimetres (20 inches) deep, and then through three metres (9.8 feet) (B) of loam and clay until the chalk (C) was reached. At this point the work would become harder and care would have to be exercised when the layers of flint were passed through to prevent the nodules from subsequently becoming loosened and falling down the shaft; but sinking

space, sometimes not more than 60 centimetres or 80 centimetres in width (about 24 or 32 inches) (5); and that he went down to nearly 12 metres (40 feet) under



Fig. 9. Neolithic flint-mines at Champignolles.



Fig. 10. Continuation of fig. 9.

such conditions speaks well for his skill as a craftsman. Fig. 9 shows, in a photograph which I took in July 1909, the section of a vertical shaft at Champignolles (11) near Sérifontaine in the Département de l'Oise in France, with the chamber at its base. The depth of the shaft was in this instance about 5.65 m. (18.5 feet). The different banks of flint through which the miner passed before reaching the workable deposit can be distinctly seen.

Fig. 10, from a photograph taken in close proximity to the shaft in fig. 9, shows the quaternary deposit of loam mingled with fragments of flint through which the miner would, in places, have to pass while shaft-sinking before he could reach the chalk which held the nodules he was making for.

Generally speaking the form of the neolithic shaft and chamber may be compared to that of a bottle with a long neck, or to a Roman glass *unguentarium* (fig. 11) (12). The chamber at the bottom of the shaft has been a puzzle to many, but its purpose can be easily explained. It was

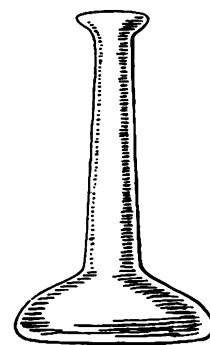


Fig. 11. *Unguentarium* representing the form of the section of a neolithic shaft.

excavated in order to give room for developing the mine and to enable several miners to work simultaneously (13) on the bank of flint, whereas one man only could work in the shaft; and a space was required to permit of their dealing with the chalk excavated from the galleries and for handling the nodules and sending them up to the surface. The deer-horn pick was certainly used for shaft-sinking as well as other tools. At Spiennes and Champignolles, flint implements in the form of picks (fig. 12) were also employed, both for sinking and for dressing or removing asperities from the sides of the shaft (6, p. 4), a thoroughly miner-like proceeding. These picks were either hafted into a deer-horn handle, or used in the hand after the sharp edges had been removed. But the real

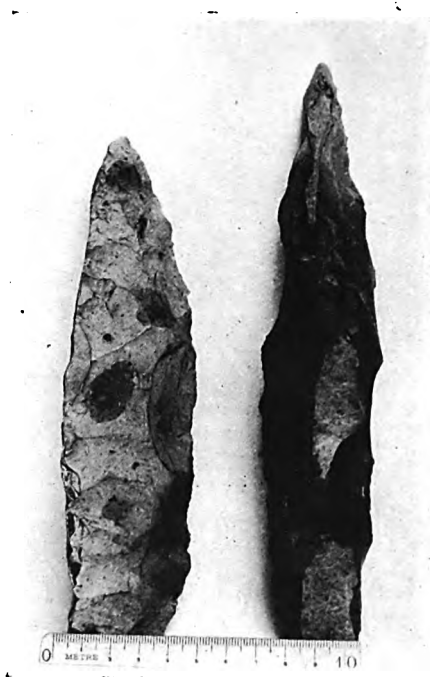


Fig. 12. Flint picks from Spiennes.

work in the mine was carried on by means of the galleries which radiated from the central chamber. These were at times as many as six or seven in number (14), and in them as many miners could work concurrently if desired. The galleries were usually about 60 to 80 centimetres high (24 to 32 inches), and of about the same width when driven in a definite direction with the object of reaching a new field of operations or of communicating with a neighbouring shaft. In other words, they were just and only just large enough to permit of a miner working within them. The neolithic miner wasted no time or energy in doing more than the minimum amount of work necessary to enable him to attain the object he had in view; just as the Roman miner did, and the miner who followed him; and just as his congener of to-day would do and does when left to his own devices. The galleries were usually driven in chalk or solid ground, while the "sole" or floor was formed by the bed of flints to be worked; and they gradually opened out in width so

as to offer a wider field of operations, care being taken to leave a barrier or wall of chalk between the galleries and workings so as to serve as a support for the roof. Sometimes, however, the galleries were driven "into the country", and working chambers were opened out from them on either side. Fig. 13 gives a diagrammatical illustration of the ground plan of a neolithic flint-mine, showing the converging and diverging galleries, and the different forms they took. It has been composed partly from personal observation of ancient workings, and partly, indeed mostly, from illustrations in various works which deal with this special subject. The figures refer to the sources that have been drawn upon for the illus-

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tration, while "S" = a shaft, "P" = a pit, and "W" = the so-called "windows" or ventilating openings.

It is in these galleries and old workings that the greater part of the mining tools are found. They are of more different kinds and more varied in form than the implements found in the shafts, but the deer-horn pick always predominates as the tool *par excellence* of the neolithic miner; and several of these are illustrated on plate XVI.

No. 1 is a very fine specimen from Grimes Graves. No. 2 is from Obourg. In this instance the *trez* tine has been utilized, and the "scars" left by the flint-saw used for severing the beam can be distinctly seen. No. 3, from Obourg in Belgium, is a remarkable specimen, in that it is formed of the cup and points from the upper part of a gigantic antler and that the lower point has been "bevelled" so as to form a chisel or cutting edge. No. 4 is a heavy pick from Obourg. No. 5 is an exceptionally fine example from Spiennes in Belgium, made from the antler of a slain stag. The back of the implement has been used, at the burr end, as a hammer. Such was also the case with another specimen from Grimes Graves, as can distinctly be seen in fig. 15. Nos. 6, 7, and 8 are from Champignolles in France. No. 6, again, has been formed from the cup end of an antler, and shows traces of long usage at the point. The terminating tines were

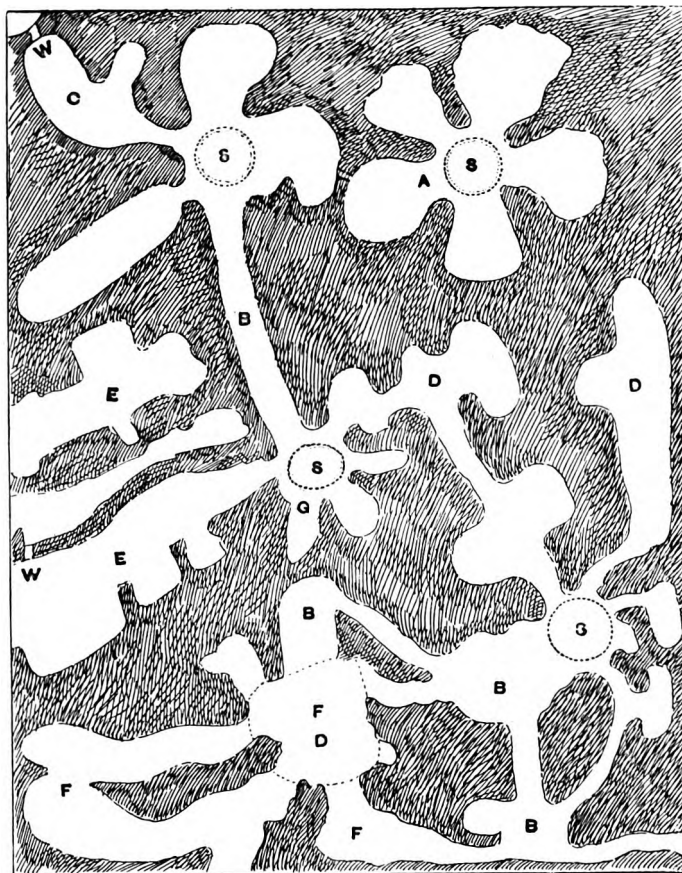


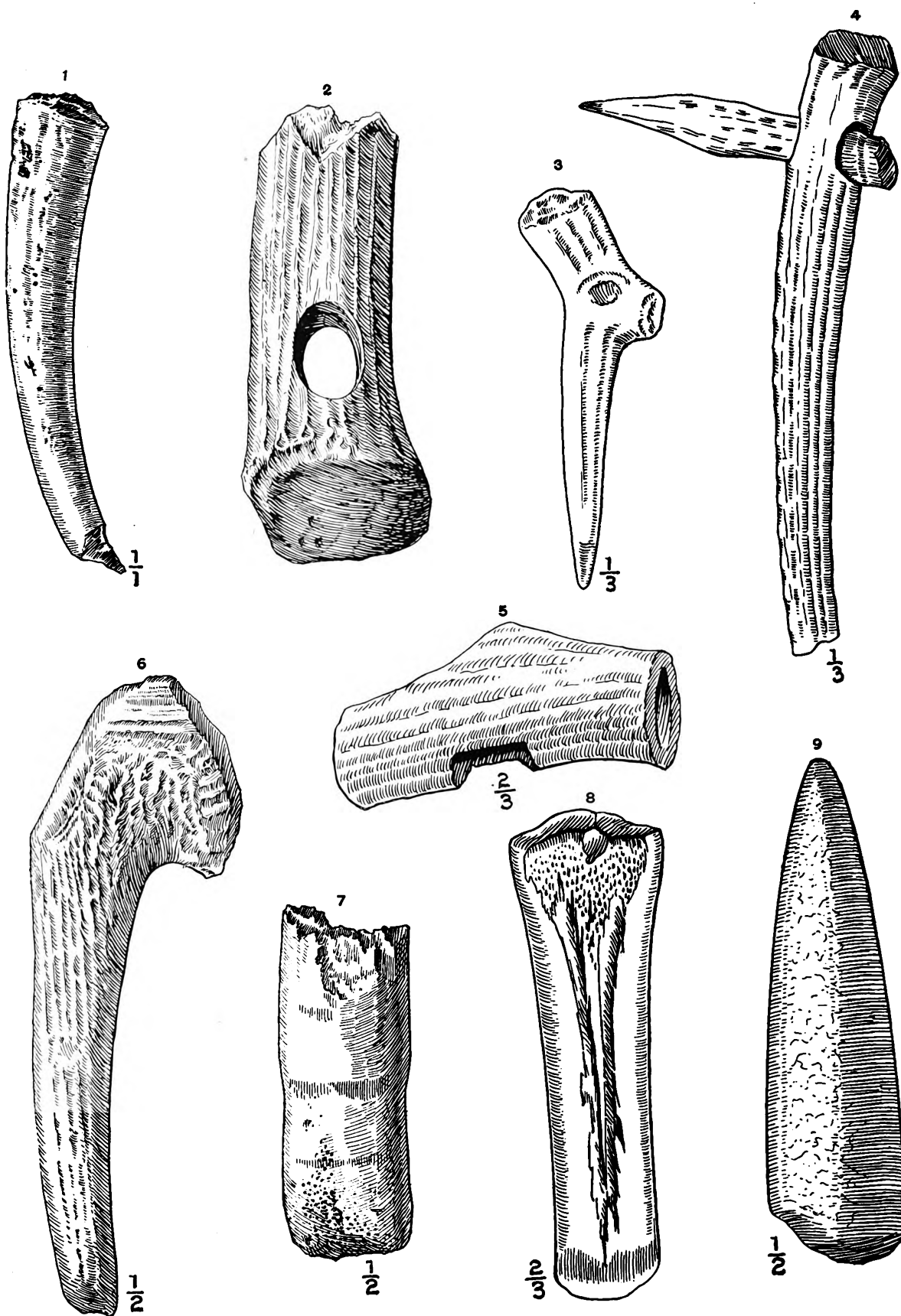
Fig. 13. Ground plan of neolithic mines.

A = Puits préhistoriques de Nointel (16). B = Grimes Graves (13). C, D, E, F = Cissbury Camp (17, 18, and 19). G = Puits de Valennes (15). S = shaft. W = window.

probably utilized as a hoe or rake, or as a lever for dislodging the nodules of flint in the mine. In nos. 7 and 8, which were both cut from the top of an antler, the end of the shaft or uppermost point was left in position, as frequently happened at Champignolles, thus rendering the pick an exceptionally useful double-handed implement, as I have already explained. Speaking generally, the deer-horn picks found in neolithic workings were abandoned because they were worn out, and in many cases the effects of long usage can be distinctly seen on

the shaft, worn smooth by friction in the hands of the miner. In the galleries and chambers other tools than the deer-horn pick were used to loosen the blocks of chalk, to dislodge the nodules of flint, to free them from the gangue, and to break them into smaller and more serviceable sizes, and even to dress them into rough-shaped implements before sending them up to the surface. Several of these tools, which were varied in form to suit the many purposes to which they were applied, are illustrated on plate XVII, while all were made from the antler of the red deer or animal bones except no. 9. No. 1 was made from a tine, and was used as a wedge and for loosening the layers of chalk and separating the blocks of flint from the bed. No. 4, made from part of the beam of an antler with a tine inserted transversely to form the pick, was used for driving the gallery in confined spaces and for picking out the nodules from the bed. No. 2 was a hammer used for driving in the tine wedges to loosen the blocks of chalk or flint, while no. 3 may have been used for levering them out; no. 5, from an antler, probably served as a haft for a flint-mining implement. No. 6 was used as a hammer for loosening the gangue from the nodules and for breaking them up. Nos. 7 and 8, made from the metacarpal bones of a horse, may have been employed as wedges for loosening the chalk or for fashioning flint implements. No. 9 is a remarkable tool. It is a stone hatchet of basalt found by the Rev. W. Greenwell in Grimes Graves, "and the marks of its cutting-edge were plentiful on the chalk sides of the gallery in which it was discovered" (13). A similar implement (a polished stone axe of andesite) has been found in the neolithic flint-mines at Mur du Barrez in France (32).

I have already referred to the method employed in opening up a neolithic mine by means of galleries or chambers radiating from, or connected with, a central chamber at the bottom of a shaft. The different workings were separated, as I have already pointed out, by walls of undisturbed chalk of irregular shape and varying thicknesses, with the object of sustaining the roof, and so preventing the collapse of the galleries, etc.; but the neolithic miner knew full well that such precautions might eventually not prove to be sufficient, and he was wont to make his mine still safer by filling up the galleries with chalk and débris brought from the neighbouring workings, just as a modern miner fills the "stopes" or working chambers with mine-rubble to-day (21, 13). The filling in many instances consisted largely of flint chips and of partially worked flint implements, proving that a certain amount of preparatory or fashioning work was done underground. Many used and discarded mining tools have been found intermingled with the fillings. The shafts were treated in the same way, although, in all probability, not altogether for the same reason. They were filled with rubble and débris extracted from the neighbouring shafts, often in the order in which they were extracted (21), a very practical and simple method of disposing



NEOLITHIC MINING IMPLEMENTS

Nos. 1, 6, 7. Cissbury, Sussex (17)

Nos. 5 & 8. Mesvin, Belgium (20)

Nos. 2, 3, 4. Nointel, Département de l'Oise, France (16)

No. 9. Grimes Graves, Norfolk (13)

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of the waste from other mines. Deer-horn picks showing signs of wear have often been found among the shaft fillings, which not infrequently comprise flint chips and wasters from the adjacent factory as well, also the bones of animals and pieces of broken pottery and other rubbish from the neighbouring mining settlement. I have endeavoured to show the normal character of the filling of a shaft in fig. 8, based, in this instance again, on the results of investigations carried out in different parts of Europe.

Another form of mine implement has been found in Britain, viz. the scapula of the *bos longifrons*, which was evidently used as a shovel for clearing away the chalk loosened from the galleries or for filling baskets with flint nodules or fragments. Some doubt has been expressed as to whether scapulae were employed for such purposes, but further and convincing proof of such usage has recently been afforded by the investigations carried out by Mr. H. St. George Gray at Avebury, where similar implements in association with deer-horn picks have been found at the bottom of the deep ditch that surrounded the monument.

Another tool of a special character has been discovered in the flint-mines at Champignolles (11) in France in association with deer-horn picks. It is in the form of a hatchet, being probably hafted, and would prove to be a very efficient tool for driving a gallery in the chalk.



Fig. 14. Flint-mining implements from Champignolles.¹

It is the middle object in fig. 14, while to the left is a flint pick, which would also in all probability be hafted, and on the right a pick to be used in the hand, the "asperities having been removed by hammering so that the elongated portion formed a (convenient) shaft or handle" (22). These picks were used for dressing down the sides of the shafts and galleries, as I have already pointed out, as well as for separating the flint nodules from the chalk or gangue. A similar hatchet was found at Grimes Graves, and is now in the British Museum.

The method employed by the neolithic miner for drawing the flint and "rock" to the surface has not been clearly determined. It is possible that in the wider pits or shafts which appear to have been the practice in Britain the "stuff" may have been thrown up from ledge to ledge, but this could not have been so in the case of narrow shafts, and there is no doubt that a cord made of

¹ From the collection of Dr. Baudon, Député de l'Oise, Beauvais, France.

fibre or grass, such as is used in Spain to-day, was employed for raising material from the bottom of the pits. Indeed, distinct traces of such usage have been discovered at Spiennes in Belgium (6), where an "enormous block of chalk", with two lateral grooves for the attachment of the cord, was found in the filling of a shaft.

Neither have the methods employed by the flint-miner for descending and ascending the shafts been satisfactorily demonstrated. It may be assumed that in the larger pits in Britain, and where there were stages, the miner would hoist himself from step to step by means of a rope; but this, again, could not have been the case in the deep and narrow shafts of the Continent. He could only, in such instances, have clambered up a rope or been hauled up to the surface.

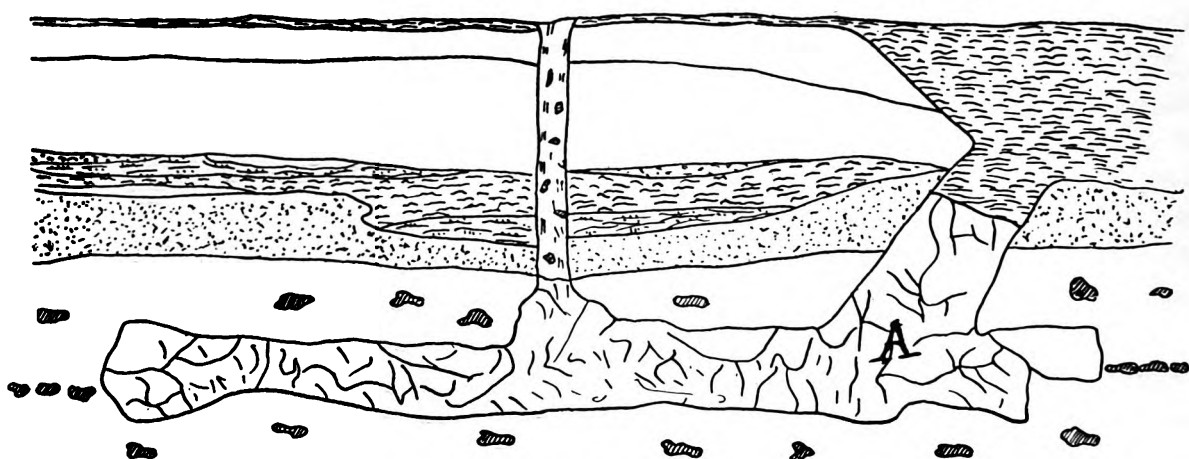


Fig. 15. Section of ancient mines at Spiennes.

Footholds on the sides of the shaft would have greatly aided the operation, and, indeed, have obviated the use of a rope; but they do not appear to have been observed in any instance that I am aware of. There was, however, another very simple means of ingress and egress which would, in all probability, be employed in some districts (namely, by means of inclined, as opposed to vertical shafts), such as those that have been found at Champignolles in the Département de l'Oise in France, and of which there is a well-known instance at Spiennes in Belgium. The above illustration (fig. 15), taken from the report of the Congrès international d'Anthropologie et d'Archéologie préhistoriques, 1868 (5), shows, to the right of the vertical shaft, a much wider approach to the mine, amounting almost to an inclined plane; and as many of the underground workings were connected, the miners would have had no difficulty in making their way to A and using the shaft for entering or leaving the mine.

The method employed in lighting the flint-mines has given rise to much controversy, and opinions have been expressed that artificial light was not employed, but this would only have been the case in exceptional instances where

the workings were restricted in extent and in close proximity to a very large shaft or pit.

The galleries and chambers were in most cases too far removed from the shafts and too extensive to admit of the penetration of the light of day through the opening of the shaft above, and some form of artificial illuminant must have been employed. It may have taken the form of resinous torches, as was the case in Spain in a more recent phase of mining with the deer-horn pick, as I will show later on; or of cups or lamps made of chalk, which were filled with grease and furnished with a wick. I know of no case where the remains of torches have been found in flint-mines, but it is otherwise with the lamp, and we owe it to that careful investigator and conscientious recorder of facts, Dr. Greenwell, that there is at any rate one well-authenticated instance of a neolithic lamp having been found in position. Four such lamps were discovered during his investigations at Grimes Graves, "one in a pit, and others in the galleries, in one case placed upon a ledge of chalk just in the proper position for throwing light upon the place being worked" (13). There is, moreover, another reason why artificial light must have been used in these often deep and extensive mines. As I have already mentioned, the shafts were sunk to the top of a bed of flints, and there the workings began. The miner worked the bed that was under his feet, or, to use a mining expression, in the "sole" of his level, and in some cases, as at Spiennes for instance, the bed has been found to be 50 centimetres (20 inches) deep (6). Care was necessary to remove the nodules properly, and this could not have been done in darkness or in semi-darkness.

The number and the close proximity of the shafts in a flint mining-field has often been a matter of surprise and wonder to investigators, but in this instance again the neolithic miner worked methodically and with a thorough knowledge of his trade; for numerous shafts, although representing a considerable amount of "dead-work", greatly facilitated the development of the mines by providing ventilation for the workings, by extending the field of underground operations, and by expediting the delivery of the production to surface. Even in much later periods the sinking of multiple shafts was one of the features of practical mining, and it may indeed be said to have been a common practice in Roman times, while, in our own days, miners have a tendency to multiply shafts where scientific practices do not prevail. There are indeed instances where they deliberately do so even to-day, as the following extract from the Rev. J.W. Hayes's very interesting monograph on Dene-holes (23, p. 64) will show. Mr. Hayes quotes Mr. Darwin's report, which is directly based upon Mr. Charles Dawson's study on "Ancient and Modern Dene-holes and their makers" published in the *Geographical Magazine* in 1898:

The whole of this area (Brightling in Sussex) is covered with countless thousands of pits. . . . The workmen who with their forefathers have been accustomed to this industry

(procuring limestone) perform the work with wonderful celerity. They sink a well 3 or 4 feet in diameter through blue and brown shales until limestone, 40 sometimes 50 or 60 feet from the surface, is reached. The cavity above the stone is then belled out, and four small arched lateral chambers are dug out at four equidistant points. . . . While the last pieces of stone are being removed from the pit, one of the men commences another shaft about 6 yards away . . . this way occupies less time (than mining), is less expensive, and the men work on the same general design because they know by experience that it is a safe one. Indeed, the whole operation of digging a well and getting out the stone is only a matter of a few days, and then they fill one pit with the débris of another.

The close analogy between the methods of mining as practised to-day by the searcher for limestone and those of the neolithic flint-miner of several millenniums ago is indeed remarkable.

I have thus far referred to the use of the deer-horn pick in mining operations on the Continent, where researches in the interesting field of neolithic mining have been pursued more extensively and actively than in England; but all the evidence forthcoming points to its having also been the principal implement employed in excavating shafts and driving galleries in the flint-mines of Britain. The best known neolithic flint-mines in England are those at Grimes Graves near Weeting in Norfolk and at Cissbury in Sussex; the former of which were investigated by Dr. Greenwell in 1869, and the latter by Mr. E. H. Willett, Col. Lane Fox, and others in 1873-7. A considerable number of deer-horn picks and other tools, similar to those which were in use on the Continent, were found in both places, Dr. Greenwell having discovered no less than seventy-nine of such picks in the restricted area which he investigated (13). There is, however, one feature which distinguishes the flint-mines in Britain from those in Gaul, viz. the greater dimensions of the shafts. At Cissbury the shaft cleared out by Mr. Willett measured nearly 19 feet at the mouth and $12\frac{1}{2}$ feet at a depth of 15 feet, while the shafts or pits at Grimes Graves are described as circular and varying in diameter from 20 to 65 feet. The pit opened was "rather under the medium size, being 28 feet (about 9 metres) in diameter at the mouth, and gradually narrowing to a width of 12 feet at the bottom, which is 39 feet below the surface" (13, p. 423). It is difficult to account for the size of the shafts in Britain. They would offer the advantage of better ventilation, and more light would reach the lower working through them, but, on the other hand, they represented a much larger amount of "dead-work" than the narrower shafts in Gaul, and the only logical inference to be made from them is that the art of mining in neolithic times was less advanced in this country than it was in many places on the other side of the Channel. Dr. Greenwell states, as the result of his careful observations, that (13, p. 426) "the principal instrument used both in sinking the shaft and in working the galleries was a pick made from

the antler of the red deer, numerous examples of which were found in the shaft at various depths and in the galleries". It was at the end of a gallery, 20 feet 8 inches from its mouth, that Dr. Greenwell found two picks in the position in which they had been left by the ancient flint-miners, in front of two hollows extending beyond the chalk face of the end of the gallery. Fig. 16 represents one of these very picks, which is not only interesting from its associations but also from the fact that it bears unmistakable evidence at the back of the burr of use as a hammer.

But although there was a marked difference between the methods of shaft-sinking in the neolithic flint-mines in Britain and in Gaul, there were remarkable points of similarity in other respects, and in none more so, perhaps, than in the provision of a small pit or trench in the chalk at the bottom of the shaft, such as has been observed at Cissbury and was the rule at Champignolles in France. It is difficult to conjecture its use, as Mr. Willett points out (14), but it is possible that it may have served to collect the rain water which must have found its way into the shaft, especially when the workings were situated on the side of a declivity.

I have so far dealt with the use of the deer-horn pick in connexion with neolithic flint-mining, and in no instance has any object of bronze been found in the working or fillings of galleries or shafts. That the mines were in exploitation during different phases of the neolithic period is probable, as I have already pointed out when comparing the workings at Spiennes and at Obourg in Belgium, and as M. Rutot so ably demonstrates (22) in his study of the same districts, when he compares the fauna found in the workings, and shows that those at Obourg were "wild" (*une faune sauvage*), while those at Spiennes were domestic (*des espèces domestiques*), and as Mr. Willett considers to have been the case in the Cissbury and Grimes Graves mines (14). But be that as it may, the mines and the picks were undoubtedly of the Stone Age.

The employment of the deer-horn pick was, however, not confined to mining for flint. It was also employed, as I will show, in prehistoric calcite, copper, salt, and tin mining.

It has been found at Furfooz in the province of Namur in Belgium in old workings from which calcite had been obtained for the purpose, principally, of



Fig. 16. Deer-horn pick from Grimes Graves.

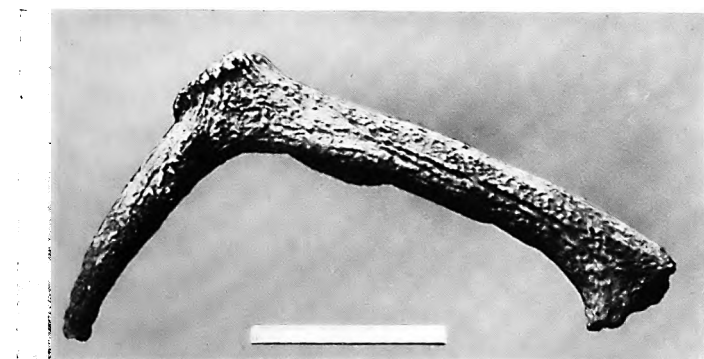
mixing it with the clay employed in the neighbourhood in the manufacture of pottery. Two parallel veins of calcium carbonate were worked by the open-cast method, and from the calcite extracted the most suitable portions were selected and then broken up by hammering with a deer-horn implement, or with stone



Fig. 17. Pottery showing fragments of calcite.

mauls, to the size required for admixture with the clay. The pottery (fig. 17) was very coarse in texture and simple in form. In some of the fragments found, there were the distinct impressions of grains of barley. The tools which were found associated with the deer-horn pick in flint-mining, such as the rake, the hammer, and the wedge, have also been found at Furfooz, and are illustrated on plate XVIII. No. 1 is a pick, no. 2 a rake, and nos. 3 and 4 show distinct traces of having been used as mallets for breaking up the lumps of calcite; while no. 6 was employed as a wedge or gad for levering them out of the vein.

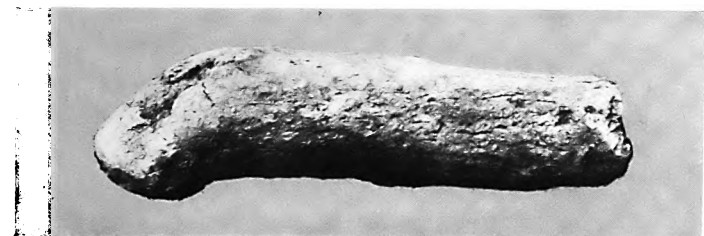
The example of the use of the deer-horn pick in connexion with mining for tin occurs in our own country, where a fine and interesting specimen was discovered, about 100 years ago, at Carnon in Cornwall, some "30 or 40 feet below the surface, lying on the tin-bearing stratum (of the stream tin) associated with human skulls, deer horns, and a wooden shovel". The "deer horns" were probably the usual gads or wedges, and the association of the pick with those implements would point to their having been employed in mining operations, although the presence of human skulls is somewhat difficult to explain. The pick differs in construction from any which I have hitherto described, since it is composed of two portions instead of being all of a piece as in all other cases. The beam, which apparently formed part of a shed antler, was stripped of all its tines and then perforated at the base just above the burr, and through the perforation a tine or small antler was inserted and probably fixed in place by a cord, thus forming, with its haft and blade, a true pick as we understand the implement in our days. Mr. R. N. Worth (34), who describes this pick, attributes the [tin] mining operation in Cornwall to the earliest days of the European bronze period, but it is quite possible that this tool may have been employed after the neolithic and during the bronze period. A mining tool constructed on similar lines, which was found at Nointel in France, is illustrated on plate XVII, no. 4.



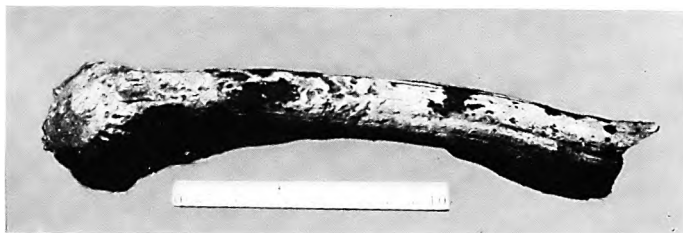
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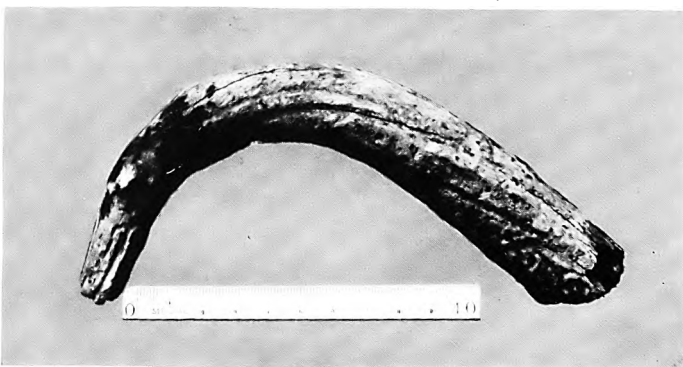
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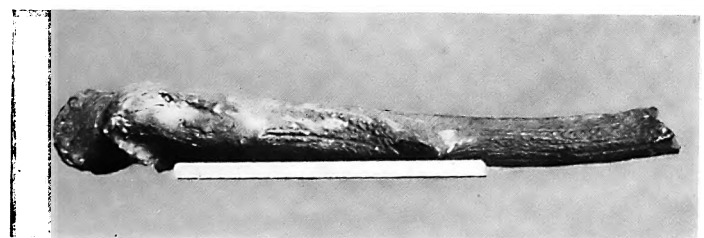
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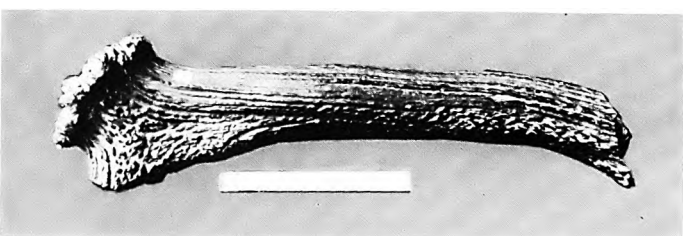
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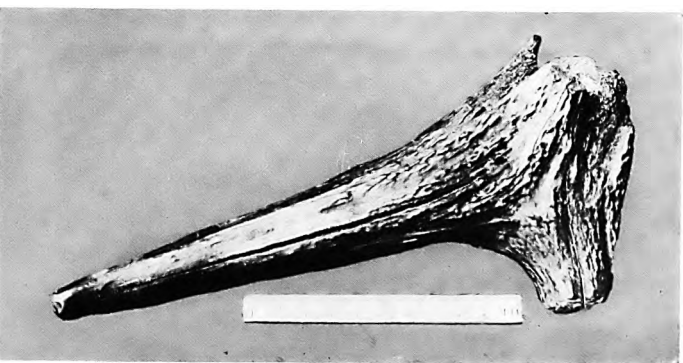
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DEER-HORN TOOLS FROM MINES IN BELGIUM, SPAIN, AND SALZBERG NEAR HALLSTATT

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The next phase of the use of the deer-horn pick came to light in connexion with very early and undoubtedly prehistoric copper (or possibly cobalt) mining in northern Spain. A fortunate though logical deduction from a casually observed freak of nature led to the discovery of an ancient mine in September, 1888 (24). Mr. Van Straalen, the manager of the neighbouring mines of Mieres, in the Aramo range of mountains in the province of Oviedo in the north of Spain, noticing that the leaves of a tree were violently agitated on a day when there was no wind or movement of the atmosphere, investigated the cause, and found it in a current of air which proceeded from an "Old man's" shaft; and further research led to the discovery of most interesting old workings, consisting of a number of small vertical shafts, leading to a series of galleries of considerable extent in which pillars had been left, as in true mining practice, to support the roof. The several veins of copper ore, in a dolomite formation, had been followed by the prehistoric miner, who left on the walls of his galleries and in the filling of his workings unmistakable evidence of the implements he used and the methods he employed in mining the precious metal. His attention was, in all probability, first attracted by native copper, or by rich nodules of black oxide of copper (containing perhaps 72 per cent. of metal) in the outcrop of the vein, which he followed down and worked in a miner-like manner. He was not, however, always fortunate in his precautions for preventing accidents, and it occurred at the Aramo copper-mines in Spain, as in the neolithic flint-mines at Obourg in Belgium, that a fall of roof or a "run-in" of the levels buried the miner with his tools, who thus involuntarily provided unquestionable evidence of the implements he used in his trade. One of the most important of these was, again, the deer-horn pick, of which one is illustrated on plate XVIII, no. 5. The deer-horn hoe, or rake, was also employed (plate XVIII, no. 9), while the beam with the burr of the stag's antler (plate XVIII, no. 7) was used as a hammer for breaking up the mineral underground. But besides the deer-horn tools the prehistoric Spanish miner, like his neolithic congener in other parts of Europe, used stone implements for driving his galleries, tines of the deer for dislodging the mineral from the gangue or vein, and stone hammers or mauls for breaking it up. The galleries were very narrow, and showed by their walls, polished by the frequent passage of the miners, that they were long in use. The ore, which was broken or pounded into small fragments, was taken to the surface in wooden hods to which a leather ring or handle was fixed to allow of their being dragged along the ground in very narrow places. In many cases the workings were filled with sterile rock, just as in the case of the neolithic mine, to prevent their caving in. The question of lighting the workings can, in the case of the Aramo mines, be definitely determined. It took the form of fire-sticks or torches of resinous wood which were inserted into lumps of clay fixed to the sides of the gallery, a method which, as I will show,

was also employed in the prehistoric salt-mines near Salzberg, where, again, the deer horn was used.

Another prehistoric copper-mine, now known as the Milagro mine, was discovered at Cangas de Onis, not very far from Mieres, where similar methods and similar implements were employed. Indeed, the deer-horn pick, the axe, and the hammer or mallet have been actually found in this mine.

There were distinct evidences in the case of both these mines of the treatment of the ore on the spot and of its reduction to some form of metallic copper; but as the Romans also discovered the prehistoric workings and extensively developed the Alamo mine, care is necessary in distinguishing between the results of their smelting operations and those of their predecessors. In the instance of



Fig. 18. Copper or bronze axe from Milagro mine, Spain.

the Milagro mine, however, the case is different, as copper (or bronze) axes of an early form (fig. 18) have actually been found in the prehistoric workings. This fact points to the exploitation of the mine in the early Bronze Age, but while the employment of metal was still rare and unusual; and I offer the opinion that the deduction to be drawn from the extensive use of the deer-horn pick and other horn and stone implements in

both mines; is that they were originally worked by miners who sought the copper, perhaps in its native form, for the purposes of trade or barter, and that they only subsequently learned to make direct use of it for their own purposes. I think, moreover, the deduction is fair that the workings at Alamo, where no metal objects or traces of them were found, date from an earlier period of prehistoric mining than those at Cangas de Onis whence the metal axes came.

I will now turn to a central European district and to a later period, in all probability, for still further evidence of the use of the deer-horn pick in prehistoric mining. In this case salt was the object of the venture, and very extensive workings for obtaining it were carried out in very early times at Salzberg near Hallstatt in the Austrian Tyrol. The tools and apparatus utilized were naturally of a higher order than those discovered in the sites to which I have already referred, and point to a much advanced stage in the art of mining and in general culture; but the deer-horn pick remained, nevertheless, one of the principal tools employed. Part of the beam and burr of an antler pick and the head of another pick are illustrated on plate XVIII, nos. 8 and 9. They were found in the Kaiser Joseph Stollen (27, p. 125) together with other implements, among which were a stone gad or wedge, and a portion of a copper or bronze pick; whence it is evident that in the case of the Salzberg mines in Austria, as in that of the Cangas

de Onis mines in Spain, metal tools were employed contemporaneously with implements of deer horn and stone.

The type of metal pick is particularly interesting. It is pyramidal in form, and consists of an elongated socket (fig. 19), which was fixed at right angles to a wooden haft by means of a wedge-shaped cross-piece of wood, with the result that it formed an implement (fig. 20) closely resembling in form and purport the deer-horn pick from which it was probably derived. The stone gad was of similar form.

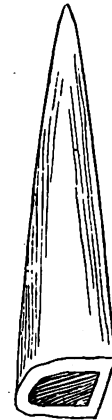


Fig. 19.
Metal pick.

Bronze axes, spades, and other utensils of wood, as well as sacks of hide for transporting the salt and the remains of clothing, were found in the mines in association with deer-horn tools.

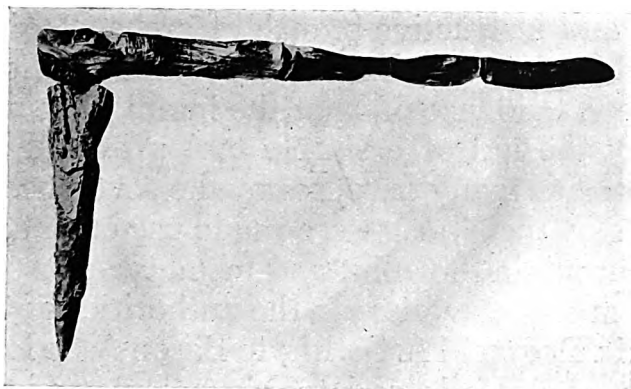


Fig. 20. Hafted metal pick.

The salt-mines were approached by shafts, and as the prehistoric workings extend in depth to 600 feet in places (25, p. 41 ; 27, p. 125) it is obvious that artificial light must have been employed, and in this instance, as in that of the Alamo mines in Spain, torches of resinous wood were used, the remnants of which are found in great numbers in the ancient workings (fig. 21).

But the deer-horn pick was not used exclusively in mining operations in prehistoric times. It was also employed in agriculture (33), and it was probably in general use as an implement for digging and excavating. A large number have been found (in 1908) at the bottom of the deep fosse at Avebury (28). Indeed, we find the pick still in use in Romano-British times, examples having been discovered at Woodyates (29) and at Silchester (fig. 1).

The latest discoveries are those at Maumbury Rings near Dorchester, where the excavations carried out by



Fig. 21. Fragments of torches found at Salzberg.

Mr. H. St. George Gray in 1908, in the Roman amphitheatre, led to the uncovering and the opening up of a prehistoric shaft over which the Romans had heaped their embankment (31). The shaft, which appears to correspond in its main features with the shafts at Cissbury and at Grimes Graves, was cleared out to a depth of 30 feet, and a number of deer-horn picks, in good preservation and showing signs of wear, were discovered in the filling. It is to be hoped that further investigations will be prosecuted at Maumbury Rings and that the object of the shaft will be finally ascertained.

I feel convinced that there must be many more examples of ancient mining in this country,¹ where this interesting and instructive branch of archaeological research has hitherto attracted but little attention. Prehistoric mines are, however, well worthy of investigation as good evidence of what the intelligence and ingenuity of man could accomplish by the aid of a simple tool provided by Nature, picked up in a forest, and adapted to many purposes by the severance of some of its superfluous branches, which, in their turn, were made use of in conjunction with the principal implement in mining for flint and metals.

And, in conclusion, I must express my indebtedness to the authorities of the British Museum, to our President and Mr. Reginald A. Smith; to Baron A. de Loë, of the Musée royal du Cinquantenaire of Brussels, and to M. A. Rutot of the Musée royal d'Histoire naturelle in that town, the well-known authority on matters of prehistoric research, as well as to H. Kustos Joseph Szombathy of the Naturhistorisches Hofmuseum, Vienna, for much valuable advice and assistance in gathering together the materials which have served as a ground-work to this paper and for permission to photograph and illustrate many of the implements comprised in the valuable collections committed to their charge.

¹ Since this paper was written Mr. R. Garraway Rice, a Fellow of our Society, has called my attention to quite recent discoveries of neolithic flint-mines at West Stoke, near Chichester, where a deer-horn pick has been found.

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VII. *The Present Condition of the Ancient Architectural Monuments of Cyprus.* 1910.
By GEO. JEFFERY, Esq., Curator of Ancient Monuments.

Read 17th March, 1910.

THE desire of the writer is to afford some general information on the present condition, and presumable future, of these most interesting remains, and to enlist as far as possible the sympathies of all students of art and history in the preservation of mediaeval monuments, which, from circumstances of geographical position and present ownership, are comparatively unknown and uncared for.

M. Camille Enlart, Director of the Museum of Comparative Sculpture, Paris, was the first architectural authority of the present time to draw attention in a scientific manner to the great importance of the Cypriote series of monuments in the history of art. His great work on the analogies between French architectural detail in Cyprus and in France is fortunately well known in England, and easily available for reference. The Byzantine churches and monasteries have not yet been studied in detail, although their history is in all probability almost equally interesting.

The Hellenic Society of London, and the different archaeological institutions specially devoted to classical study, have been engaged all through the latter part of the nineteenth century on the problems of Cypriote philology and prehistoric archaeology. But architectural monuments hardly come within the scope of such studies as far as Cyprus is concerned. No ancient temple or other public monument survives in any part of the island. The bare outline of the Papho shrine, or a few prostrate columns buried in the sands of Salamis, are the only evidences of Greek or Roman culture beyond the innumerable sepulchres with which the whole island is literally honeycombed. A few of these tombs may perhaps be considered to rank as architectural—the so-called “Royal” Tombs, Tamassos, for example—but as a rule they are mere holes excavated in rock or earth as the case may be, and only interesting for the objects found within them, objects which now repose in the museums of New York, London, or Berlin.

The series of architectural monuments in the island begins with the latter part of the Byzantine period of art. The domical method of construction introduced in the times of the decaying Roman Empire and generally associated with early Christianity presents itself in all the ancient monuments which survive

as buildings, but such fragments of detail and ornament as give a clue to date are usually not older than the Middle Ages.

During the sixties of last century MM. Rey and de Vogüé visited the island, and the former gives sketch-plans and descriptions of some of the mediaeval castles of Cyprus in his *Architecture militaire des Croisés*. In 1881 the R. I. B. A. published a meagre account of the architectural antiquities by Messrs. I'anson and Vacher, and in 1899 appeared the magnificent *L'Art Gothique et de la Renaissance en Chypre* by M. Camille Enlart (published by the French Ministry of Public Instruction).

NOTE BY MR. NORMAN.

It may be well to add here a few historical notes by way of explanation. Cyprus came into the possession of Ptolemy I in 306 B.C., and was ruled as a dependency of Egypt till 57 B.C., when it became part of the Roman Empire.

On the decay of the Empire it was invaded by the Arabs, and though nominally under the control of the Greek Emperors of Byzantium, was governed by semi-independent princes.

In 1191 Richard Cœur de Lion took the island, in revenge for an insult to his fleet, and sold it to the Templars, who in 1192 passed it on to Guy de Lusignan, by right of his wife King of Jerusalem. The Lusignan dynasty held Cyprus till 1489, the last of them, Jacques III, marrying Caterina Cornaro, and leaving her ruler at his death. The Venetian Republic, however, forced Caterina to abdicate, and remained masters of Cyprus till it was taken from them in 1571 by the Turks under Selim II. Since 1878 the island has been ruled by England under an agreement with the Sultan.

P. N.

It is not necessary to speak at length of the monuments of the Prehistoric and Classic periods. The remarkable prehistoric tomb at Larnaca, known as the Phaneromeni, and now converted into a shrine and place of pilgrimage, has been much disfigured and mutilated in the process. The Tamassos tombs, excavated by the Berlin Museum about 1894, are enclosed with iron gates and well guarded, and a tomb of the classic period at Larnaca is under Government protection, after purchase. Another at the same place, though scheduled as an ancient monument, has been nearly destroyed by the owner in an attempt to extract the sarcophagi.

Tomb-rifling is a common occupation of the Cypriote peasant, though the cemeteries are now guarded by police, and the "Antiquities Law" of 1905 forbids exportation of ancient objects without a permit. Probably the most effective check would be the establishment of small district committees, after the fashion of the Italian *Uffizio Regionale*, in each of the six districts, for the general supervision of such matters.

The "Prison of St. Katherine" at Salamis, probably a Roman tomb, and the surrounding necropolis have been gazetted as ancient monuments, and are efficiently protected, and the same may be said of the sites of the Papho temples (Limassol district), and of Lambousa and the necropolis of Sandoukopetra (Kyrenia district).

BYZANTINE CHURCHES AND MONASTERIES.

These most interesting features of the island are entirely within the control and guardianship of the local authorities of the Orthodox Church of Cyprus. The churches are usually the property of the village church committee, whose proceedings are controlled to a nominal extent by the bishop of the diocese. The monastic property appears to belong entirely to the bishops of the different sees in which it is situated, with the exception of the larger monasteries, which still enjoy an independent status.

It is unfortunately the fact that probably no people in the world, at least the civilized world, have less of the sentiment which conduces to the preservation of historical memorials than the *modern Byzantines*. The average peasant of Cyprus, possibly a member of some local church committee, seems incapable of appreciating this sentiment as applied to the little Byzantine village church wherein his forefathers may have worshipped for countless generations. Hardly any European peasant of average respectability and intelligence but would confess to a certain interest and regard for the memorials of his forefathers, national or private. But to the Levantine Christian, who has but little ground for patriotism, and scanty conceptions of family descent, the village church is a mere utilitarian storehouse for more or less miraculous icons, about which nothing of a human interest seems to linger. As a consequence of this want of all sentiment in such matters, the ancient Byzantine churches, venerable in appearance but generally small in size, have been destroyed wholesale all over the island, and especially during these latter years of peace and plenty under the British occupation.

The few remaining Byzantine churches must be sought in out of the way places, such as the monasteries of Antiphonitissa and Akhieropiētōs, Kyrenia district; Santa Croce and Kiti, Larnaca district; the numerous ruins of the Karpars peninsula; and the monasteries of Asinon and Kalapoyotis, Nicosia district. Small Byzantine churches, disused and ruined, may be found all over the island, marking the sites of ancient villages abandoned centuries ago in obedience to the migratory habits of the natives. Few village churches in Cypriote villages of the present day appear to be of older origin than the period of the Lusignans, and the majority are not so old as the Venetian occupation.

MEDIAEVAL GOTHIC ARCHITECTURE.

1. *The Ecclesiastical Monuments of the Mediaeval Kingdom of the Lusignans.*

An historical value, second to none, attaches to the remarkable series of churches and castles still surviving in Cyprus. These monuments have been exhaustively described and illustrated in M. Enlart's great work already referred to, which has rendered all the more important monuments of the period familiar to architectural students. Since M. Enlart wrote his book the present writer has been appointed Curator of Ancient Monuments, and amongst the works which he has carried out in that capacity may be mentioned the following: (1) The formation of a small *mediaeval* museum in a disused church at Famagusta to contain the precious fragments (alas! much mutilated) of sculpture and architectural detail, which have been found from time to time in Famagusta. Many of these fragments are illustrated in *L'Art Gothique*. (2) The enclosure of seven of the ancient churches of Famagusta with iron gates, with the necessary repairs to the lower part of their walls, where stone had been torn out by the villagers in former years. (3) The repair of the cathedral church (now a mosque) of Famagusta at the expense of the Mohammedan Evquaf. (4) The enclosure of the royal château and castle of St. Hilarion, Kyrenia district. This has been effected by repairing the walls with masonry where necessary, and placing an iron gate at the entrance. Part of the latter property being now cultivated as forest land, it has been found possible to arrange for a forest-guard's hut to be provided within the enceinte. This guardian will serve as caretaker for the castle ruins.

The very necessary repairs to the Great Mosque (cathedral church) of Famagusta were begun during the past summer of 1908. The nave roof, clerestory, and upper part of the western towers were placed in a condition of thorough repair. The delegates of the Evquaf, to whom the principal monuments of the Middle Ages belong, are anxious to undertake all necessary work of conservation and support, to be carried out under the supervision of the Curator of Ancient Monuments. It is proposed to continue this very necessary work during the coming winter, including certain very important works of preservation at the sides of the building.

The magnificent ruin of Bellapaise is certainly the most important mediaeval monument in the island after the two Latin cathedrals. In general style it somewhat resembles Spanish or Provençal work, but the visitor is impressed above everything by the fact of its being a vast monument of the Middle Ages, like one of our ruined English abbeys, untouched by a Renaissance or later character. Long before the Turkish occupation the monastery had fallen into decay as an institution, and the buildings were doubtless passing into an uncared-

for condition. The abbot's house seems to have been pulled down long ago, probably by the villagers for the purpose of building the modern village which sprang up in the place of the old monastic corporation. This latter would appear to have survived until the end of the Venetian occupation, but in a very degraded condition. At some period, of which no record remains, the range of buildings, comprising dormitory with chapter-house and "commons" underneath, has been completely ruined by the fall of the vaulting in both stories. In spite of this disaster many interesting details of fourteenth-century carving remain in the walls, and the arrangements of the dormitory are traceable by the windows, wall cupboards, etc. which survive. The staircase from the dormitory down to the church is also well preserved. As a ruin all this portion is in good condition, and should be preserved in its present untouched state.

The refectory is a stupendous example of a vaulted hall, famed even in the Middle Ages for its remarkable proportions. It still stands intact, although its masonry is in places much decayed. Some slight appearances of opening in the magnificent vault (more than thirty feet span) suggest the advisability of strengthening the construction by the insertion of iron tie-rods across its width, and the building of a strong buttress against the west wall. This latter is necessitated by an evident tendency towards movement of the west wall, owing to the removal of the abbot's house; at this end of the hall there is a serious crack in side walls and vault which, although ancient, must be prevented from any further development. The ornamental details of the architecture are fortunately not sufficiently defaced to prevent a very complete and satisfactory impression of the general design.

The great refectory and the other ruins of Bellapaise are now in the custody of the village church committee of the place. The ancient church is used as the district church, and consequently kept in repair for that purpose. The church committee appears to be aware of the historic value of the monument, and desirous of seeing it preserved as a show place. The committee is disposed to accept the assistance of the Government in providing against the further ruin of the buildings.

2. *Mediaeval Castles.*

The Lusignan castles of Cyprus have a very imposing character from the positions which they occupy on mountain tops or as forming parts of the later fortifications of the Venetian period. From this circumstance they are also very well preserved in their ruined condition, a condition due more to human violence than to the ravage of time. The mountain castles with the royal château of Hilarion were dismantled and partly blown up by the Venetian Government at the end of the fifteenth century, since which time they have remained absolutely

abandoned. The fourteenth-century fortresses of Famagusta and Limassol, somewhat mutilated, are still to be traced within the earthwork additions of the Venetians. The least preserved of the mediaeval strongholds is the fortress of Kyrenia, which has suffered much from alterations at different times and from its present use as a convict prison.

In consequence of all the mediaeval castles, with the exception of Colossi, being Government property, their preservation is of course secured. The castle of Colossi, formerly the commandery of St. John, is private property, and at the present moment offered for sale together with the large estate of which it forms part. It is remarkably preserved, and has been used, time out of mind, as a storehouse and residence. The great mediaeval barn, now used as a stable, is in a more ruinous condition. It is most desirable that this ancient cradle of the Order of St. John should be preserved in its entirety, and saved from any commercial use which might involve its more or less complete destruction. A very good photograph of the place occurs in Rider Haggard's *Winter Pilgrimage*. There are no less than five shields of arms of Grand Masters of the fifteenth century on different parts of the premises, in addition to the usual complimentary shield of the Lusignan arms.

3. *Domestic buildings.*

Until within the past few years the remains of domestic architecture of the Middle Ages might frequently be discerned amongst the mud hovels of Nicosia, and the other important towns of the island. The rapid transformations undergone by whole towns under the influence of the British occupation have swept away many of these relics of a particularly interesting type of art. A remarkable house front of the fourteenth century in the cathedral square of Nicosia was destroyed in 1904 for the purpose of enlarging a compound for animals, and many of the similar houses which even now survive are perhaps doomed to the same fate. The interesting little Venetian house near the cathedral church of Nicosia, which has often been sketched and photographed, is fortunately Government property.

The domestic building of lowland country villages in Cyprus is of no very great importance. The architectural features of doorways and cloistered courts which sometimes occur are as a rule of very modest pretensions, and very few examples of a date before the eighteenth century are now to be found in the island.

In the mountain region of Troodos, amongst the pine forests and orchards of a kind unknown elsewhere in the Levant, may be found ancient houses of timber construction of the most interesting description. Some of these are of a very considerable antiquity, and they are often covered with a profusion of elabo-

rate wood-carving very suggestive of English Jacobean work. In these mountain districts, where the Turk and Mohammedan have hardly penetrated, the villages remind the visitor a great deal of Switzerland; the houses are built of stone and wood instead of mud, and roofed with tiles, and the village churches—there are no mosques—give a homely look to the picturesque hamlets.

THE VENETIAN FORTRESSES, INCLUDING THEIR CIVIC ARCHITECTURE.

The Venetian supremacy in the Levant was distinctly military in character. Venetian commerce and colonial enterprise were carried on under the guns of immense fortresses, and with the vigilant surveillance of the famous Venetian galleys. When these military elements of her commerce ceased to be maintained in an efficient manner, the comparatively few European colonists claiming to represent Venice in the Levant were easily swept away by the natives of the different countries where they had settled.

At the present day it is said that not a single genuine Italian is to be found in Cyprus; even during the sixteenth century it is perhaps doubtful if many colonists, in the ordinary sense of that word, could have been found in the island. As a consequence the Venetians are only represented by the purely military monuments of the Famagusta enceinte, the Nicosia earthwork, and the additions to Kyrenia castle and Limassol fort. A pretty little watch-tower of quite an ornamental character was also built on the cape of Kiti as a protection to the roadstead of Larnaca, its doorway decorated with the usual Venetian shields of arms and the Lion of St. Mark.

These monuments of the Venetian Republic suffered very much, as a matter of course, during the Turkish invasion. After the cessation of hostilities the damage done to the fortifications seems to have been carefully repaired, and at the present day it is difficult to realize the descriptions of the famous siege of Famagusta, seeing the very perfect condition of its walls and defences. The earthwork enceinte of Nicosia was incomplete when invested by the Turks in 1570. The curtain and bastions were evidently much damaged by the bombardment in their unfinished condition; the Turks repaired and completed the work after taking the city, and in so doing they appear to have added an immense sheathing of stone to the scarped faces of the earth rampart. This sheathing of stone was evidently obtained from the ruined buildings of the Middle Ages, with which the city was filled after the bombardment.

The Venetian additions to the castle of Kyrenia are most important examples of the art of fortification of the period; they are also on an imposing scale, and very well preserved. The castle seems to have been but little altered by the Turkish invasion (its commandant surrendered it without a siege) and by sub-

sequent warfare, and its present use as a convict prison may possibly date from a remote period, when the galley slaves of the Middle Ages occupied the positions of the modern convicts.

The fort at Limassol, an ancient tower of the fourteenth century, was covered in the sixteenth century with an outer shell of masonry to protect its walls from the newly invented siege guns. At one side an extension with vaulted apartments, now used as prison cells, was added at the same time.

All these ancient fortifications, with the exception of the Nicosia enceinte, are still in a wonderful state of preservation, and call for nothing in the way of repair or alteration. The wall of Nicosia is now unfortunately dilapidated beyond repair.

The Venetian watch-tower of Kiti, although much ruined, is carefully guarded.

The civil and domestic buildings of the Venetians are few and, with the exception of the "Palazzo del Proveditore", Famagusta, of very little importance. The "Palazzo Publico" of Nicosia survived in a ruined condition until about 1904, when its last vestige was removed to make room for the new "konak" or law courts. The column intended to support the insignia of the Republic in front of the "Palazzo" still stands within a garden surrounding a neighbouring mosque, which has encroached on the public piazza. This column is of singular interest on account of the shields of arms and a curious inscription remaining on its base.

A fragment of the sixteenth-century palace of the Proveditore in Famagusta is preserved within the present police drill-yard. It consists of the outer wall of the completely ruined residence, pierced with small "rustico" windows and a doorway. The great façade or entrance to this palace also stands fronting the west end of the former cathedral church; its three rusticated arches and the four granite columns brought from the ruins of Salamis are very much hidden by subsequent Turkish hovel-building. The stone cornice of this façade has been much mutilated, and is in fact to a great extent missing. This entrance façade is the most important Venetian monument in the island.

Facing the ruins of the palace at Famagusta stand the two Venetian columns intended to support the insignia of the Republic. They are in excellent preservation, with the exception of one of the capitals which is broken. These columns, like the one in Nicosia, stand within a Moslem cemetery or mosque inclosure and consequently are the property of the Evquaf. In all probability the small lion now lying in a much mutilated condition close to the water gate was formerly fixed upon one of these columns. These columns are monoliths of fine grey granite, and came probably from the same ruined building in Salamis which seems to have provided several other buildings in Famagusta with similar ornaments.

The celebrated sarcophagus, known in the Middle Ages as the "Tomb of Venus" (of Roman style and workmanship), which stood between the two columns of the piazza until at least the Turkish occupation, was removed to the neighbour-

ing village of Varosha about 1880 for the purpose of serving as an altar-tomb in a small private burial-ground. In its present position it is well cared for.

A few fragments of Venetian architecture in the "rustico" style still survive amongst the squalid mud houses of Famagusta. It is to be feared that, as private property, they are doomed to disappear in course of time.

NATIVE ART DURING THE VENETIAN AND TURKISH OCCUPATIONS.

As already remarked the presence of Venetian colonists can hardly be detected in any remains of the sixteenth century surviving outside the walls of the great fortresses. During the 16th-17th centuries the majority of the old village churches were refitted with new woodwork in the form of an elaborate iconostasis of a more closed-up design than possibly prevailed at an earlier period, new icons, and new lamps, chandeliers, etc. These "restorations" of the period are of great interest, exhibiting the influences of a belated Venetian Renaissance style in the type of wood-carving, and of a quite mediaeval character in the huge bronze chandeliers which still hang in many of the churches. The iconostasis is always covered with minute designs of flowers, birds, dragons, etc. copied evidently from old woodcuts of fifteenth-century style, heavily gilded and relieved on a background of dark blue. The icons displayed on the screen are usually of a superior type of Byzantine painting, and include votive pictures with donors in interesting costumes. Processional icons, movable lecterns, candlesticks, etc. in the same kind of carved woodwork, are frequently to be found in these old churches. The magnificent bronze candelabra, generally of a distinctly mediaeval type, still often hang from the vaults of village churches, although they are liable to be removed when there is a chance of replacing them with the more admired glass chandelier in the modern taste.

During the Venetian period a very remarkable development in what may be termed an "imitative style of Gothic" took place, at least in Famagusta. Of this two remarkable monuments remain: the Metropolis or cathedral church of the Greeks, and the church now known as St. Nicholas. The first is a complete ruin, shattered by the bombardment of 1571; the second, remarkably intact, has been used, time out of mind, as the Government tithe grain store. They are the largest examples in the island of a method of building and design (quite unlike the orthodox Byzantine) which originated in an effort to copy the surviving monuments of the Lusignan period.

This interesting style of the sixteenth century, with its more or less Gothic architecture and Renaissance fittings, seems to have been retained almost until the British occupation. Very little architectural work was attempted in

the time of the Turks, with the exception of the rebuilding about 1700 of the great church of St. Mammias, Morfu. About 1878 many changes took place in the social condition of the Cypriotes, and since then the huge barn-shaped churches of the modern Levantine style have sprung up all over the island; a style quite unlike the imitative "Gothic" which preceded it. (See next page.)

Many of the churches and monasteries built in the seventeenth and early eighteenth centuries are well worth careful preservation as examples of this curious survival of "Gothic" architecture. In addition to the three examples referred to many smaller churches are worth a journey to inspect: Ay. Pantaleimon and Ay. Gavril monasteries in Nicosia district; the church of Tripiotis in Nicosia; the monastery of Myrton, Kyrenia district; the great monastery of Kykko in the Troodos mountains, and others too numerous to mention.

THE TURKISH OCCUPATION.

Few if any monuments of an architectural kind can be associated with the Turkish government of Cyprus during the past three hundred years. The larger ancient houses of the Latin and Venetian periods in Nicosia, Famagusta, and elsewhere, which survived the looting and general destruction of the Turkish invasion, seem to have been converted by the conquerors into homes for themselves, with much alteration and transformation. European houses inhabited by Asiatics for three hundred years have naturally lost most of their characteristic features. The walls have been pierced with large windows in all directions, covered by clumsy jalousies, which seem to have been in vogue for centuries amongst the Turks. The most striking change, however, is in the introduction of immense square projecting bay-windows of the upper floor, without which no Turkish house is complete. In a very large number of cases the architectural mouldings and other ornaments of a street house have been chiselled off the fronts by the new occupiers.

The water supply of the cities, and also of country districts, was very much altered under Turkish management; and in Famagusta several very large baths of an architectural character appear to have been erected. At the present day these latter are all in ruins, and the water supply is again undergoing a transformation with windmill pumps.

About the middle of the nineteenth century a fairly large mosque (Arab Achmet), with a dome, was built in Nicosia, and a small octagonal library, with a dome, was added to the Mohammedan High School. These buildings are of the most unarchitectural character possible, and without ornament of any kind.

It will consequently be seen that Turkish monuments come within the scope of the present review from an historical and not an artistic standpoint.

A special reference may perhaps be made to the deplorable destruction of the ancient village churches all over the island, a destruction which has taken place more especially during the past thirty years of the British occupation, and is apparently one of the best evidences of the flourishing commercial condition of the peasantry.

In almost every case the ancient church has been pulled down merely on account of its *antiquity*, a reason which would hardly be given for such a process in any other civilized country. By *antiquity* in this case is meant, not so much a ruinous or decayed condition, as the fact that the building is no longer in the approved style of the present day.

Another and more reasonable argument for the destruction of these ancient monuments is the need for increased accommodation and modern convenience. But this argument applies to only a very few instances.

When an ancient village church is pulled down and replaced by a modern building, hardly a vestige of antiquity is allowed to survive on the site; the ancient materials are used up in the foundations of the new church, or of some other building. Tombstones are made use of for various purposes, and even the iconostasis is only occasionally adapted to the larger width of the new church.

With these purposes in view it is hardly to be expected that the average member of a Cyprus village church committee will listen patiently to any arguments which may be put forward on behalf of the preservation of such ancient monuments, at least for the present. It may be hoped that in the future a different train of ideas may be infused into the minds of the church authorities in the island by the dissemination of information as to the way in which such matters are viewed in other civilized countries.

It is the desire of the present writer to draw the attention of English archaeologists to the great need existing for a dissemination of correct views on the subject, either through the local press, or by distribution of pamphlets published under the auspices of the learned societies, views in support of his efforts to preserve the ancient monuments of the island.

It will be seen from the preceding pages that Cyprus possesses a long series of ancient monuments, many of which are perhaps second to none in the world for historic and archaeological interest. Even their artistic character is of great importance. The few surviving traces of the archaic and classic periods appeal to the scholar, the beautiful Gothic art of a foreign mediaeval domination and the original developments of the more native Byzantine style interest the architect and artist, whilst the magnificent fortresses of the Venetians are amongst the finest memorials of the great Republic.

The late Bishop Stubbs, of Oxford, in his University lectures of 1878, took for his theme the history of Cyprus, which he describes as "a portion of the history

of Christendom, little noticed of late years, but which is closely connected with one of the greatest movements that ever affected the history of the world". It is hardly necessary to enlarge upon the importance to future students of such monuments as may survive the destructive influences of modern times.

At the present day the great social and commercial changes due to the British occupation of the island have given rise to a strange ambition and ostentation in the minds of the village communities. This ambition unfortunately takes the form of rebuilding the ancient village churches in a spirit of emulation, one village with another. As already remarked the villagers have little, if any, veneration for mere antiquity; in fact they consider *newness* the only thing estimable either in buildings or anything else. The problem of how to counteract such an unfortunate sentiment is sufficiently difficult, and seems only to be met by suggesting the formation of an organization based in principle on the "Uffizio Regionale" of Italy. The island is divided into six administrative districts, each having its principal town or centre of population. In each of these a few individuals, say half a dozen, might be found to act as honorary local committees for the inspection of their local historical monuments in the same way as is done in Italy. Reports on intended destruction of ancient monuments could be transmitted to Government through the proper channels, and when necessary the needful and reasonable proceedings could be taken to prevent much wanton destruction.

It may be argued that the greater part of the destruction is already perpetrated, and little remains to be rescued in the twentieth century. But the same argument holds good in almost every other country. If there is very little now to preserve of interest attaching to the historic past, it will be all the easier to accomplish. It is true that many, perhaps the majority, of the village churches of Cyprus are now destroyed and replaced by the modern "barn" type of building, but the few remaining are all the more interesting and worth preservation.

In conclusion, the present Curator of Ancient Monuments would draw attention to the fact that during the past two or three years he has succeeded in securing almost all the ancient church ruins within the walls of Famagusta from further spoliation, and that taking advantage of the Antiquities law of 1905, which was drawn up chiefly with a view of regulating the traffic in "excavated antiquities", he has obtained the registration of nearly all the Government properties which are ancient as Ancient Monuments.

That which now remains to be done is the extension of protection over the monuments which happen to be in the possession of religious bodies or private owners.

VIII. *On the Early Use of Arabic Numerals in Europe.* By G. F. HILL.

Read 14th April, 1910.

THE object of this paper may best be described by explaining how it came to be undertaken.¹ The date 1481, which occurs (Table XLIV. 15) on an Italian medal of the Sultan Mahomet II, by Constantius, happened to be called in question. On inquiry it became clear that there was no reason to suspect this particular date on the ground of the forms of the numerals. But it was equally clear that there were other problems of the same kind more difficult of solution, and that the only way to approach them with any hope of success was to collect and classify as large a mass as possible of securely dated instances of the use of these so-called Arabic numerals. As always happens, the material proved to be a thousand times more plentiful, and by no means less difficult of verification, than he who light-heartedly undertook the research had supposed.

I do not wish to depreciate the work of my predecessors, to even the most casual of whom I am indebted more than I can say; but of a systematic treatment of this subject I have found no example in English, and only one, of a limited sort, in a foreign language.

What is now offered, in the shape of over 780 classified examples, is nothing more than a *vindemiatio prima*. In no one of the numerous classes in which, with full sense of the inadequacy of the classification, I have arranged the materials, can I claim to have collected anything like a fully representative series. And it would have been absurd to attempt, within the limits imposed by time and space, to envisage more than one aspect of the question. The whole problem as to the source through which these Indian numerals, if they are, as they seem to be,

¹ The bare references which are made here and there to friends and correspondents, who have assisted in the collection or verification of material, are wholly inadequate to express the measure of my indebtedness; and some kind offices may, I fear, have escaped even that meagre acknowledgement. Nevertheless I must content myself here with a brief *gratiarum actio* to those who have placed me under very special obligation, such as Mr. C. R. Peers, to whose encouragement the completion of the paper is mainly due; Mr. J. A. Herbert, who from the beginning spared no pains to note material which might be (and always was) of service, and gave me particular facilities for working at it; Mr. Max Rosenheim, whose knowledge of German seals, coins, and medals has been of great service; Dr. Kurt Regling, of Berlin, who has taken infinite pains in connexion especially with my inquiries about German seals, a subject on which I also owe much information to Dr. August Ritter von Loehr of the Vienna Museum; Prof. David Eugene Smith, of Columbia University, a recognized high authority on the archaeology of mathematics; Herr Lockner of Würzburg, to whom I owe some of the material from that neighbourhood; Mr. Mill Stephenson, who has noted examples from brasses; Dr. George Macdonald, of the Scotch Education Office, to whose inquiries are due some interesting examples from Scotland; Mr. H. B. Walters, who has placed his great knowledge of English bells at my disposal; and M. J. A. Blanchet, whose bibliographical notes on the subject have been very useful.

Indian, came to the West, has been avoided except for an incidental reference. That problem is the subject of numerous learned monographs. The present paper has nothing to do with these numerals before they were established in the West, but, once so established, seeks to show their chronological and local distribution in a somewhat clearer fashion than is possible without a large collection of grouped facsimiles. It is perhaps unwarrantable to call them facsimiles. Only a highly skilled draughtsman could do justice to the *nuances* of the forms. But for reasons into which it is unnecessary to enter, nothing better was to be had than the rude penmanship which is reproduced in these Tables. "And with this swerd," let me hope with Chaucer, "shal I slen envie."

In some ways it would be best to let the Tables, with the brief descriptive notes, speak for themselves. A few general remarks, however, may be of service, to explain the classification, to note certain instances which are omitted from the Tables, and to indicate certain lines on which further research might, one hesitates to say with profit, be made.

And first, as to the limits of the inquiry. As a general rule, I have tried to sweep into my net everything earlier than 1500 that came my way. But after that date I have exercised selection. Sometimes I have gone far into the sixteenth century; other Tables will show little after about 1510. The fact is that the instances become innumerable after 1500, and many reasons conspired against including much after the time when the use of Arabic numerals had become universal.

Secondly, since it has been quite impossible to verify everything, the mere fact of my inserting any example in the Tables must not imply that I guarantee its existence at the present time. I fear that much that Gough or even Wright described may have disappeared by now.

The first thirteen Tables deal with manuscripts, under which heading are included a few dates on drawings. These manuscript instances are arranged for the most part according to their date; but it has seemed convenient to make here and there certain departures from strict chronological sequence. Notably, in Table I are grouped together the earliest instances of the numerals as used practically in the modern manner, and also a number of examples of the forms assumed by the Boethian *apices*. These signs, used in reckoning on the abacus, although clearly for the most part, if not altogether, derived from a similar source to the signs used in algorism, assumed highly fanciful forms, and did not develop logically. Also, as the method with which they were associated ceased eventually to be used, and as they never occur outside manuscripts, they lack interest from the point of view of this paper; yet it seemed desirable to record those instances which were found in the course of search for other things.

In the remaining Tables (II-XII) the examples from MSS. are grouped as far as possible century by century; certain Tables contain groups which stand on the

border lines and might be given by one authority to the end of one century, and by another authority (or by the same authority at a different time) to the beginning of the next. But within each century or chronological group an endeavour has been made to keep the MSS. of local schools together. Thus in Tables VIII foll. all the fifteenth-century instances are collected, but the English are kept together in VIII and IX, the German in X, the Italian in XI. This plan has the advantage of sometimes bringing out local characteristics very clearly, such as the 7-like German 5, the English o of the middle of the fifteenth century, shaped like a Greek ϕ , the early upright Italian 4, and so on. Table XIII gives a few instances of Arabic numerals from Greek MSS.

The dating of these MSS., it should be stated, is not based on the forms of the numerals. They have been dated, for the most part by expert palaeographers, either according to substantial evidence, or by the general style of the writing. Nearly all the British Museum examples have been submitted to members of the staff of the Department of MSS., whose monumental forbearance under exceptionally trying circumstances it would be unpardonable not to record.¹

The traps which beset the unwary in the dating of the MSS. are of course innumerable. The assumption that the date given for the composition of a work is the date at which the MS. was written, is obviously hazardous; incautiousness in this matter has produced not a few "early" instances of Arabic numerals. Such are the dates 1136, 1217, and perhaps 1245, which have been read in MSS. supposed to be contemporary.²

The numerals are first found in MSS. of the tenth century, but they cannot be said to have been at all well known until the beginning of the thirteenth.³ During all this early period there is, perhaps naturally, considerable uncertainty in the forms, as a glance at Tables II and III will show. One group, of the end of the twelfth or the beginning of the thirteenth century (Table II. 5, 6), seems to be derived from an Eastern Arabic source, whereas the derivation of the more usual forms from Western Arabic is fairly well made out. But even here (cp. the 3 in Table II. 6, third row) one finds a fusion of the Eastern and Western forms.

In tracing development, especially in MSS., one is hampered by the fact that

¹ This applies especially to Mr. J. A. Herbert, whom I have mentioned above; but my warm thanks are also due to Dr. G. F. Warner and Mr. J. P. Gilson. I hasten to add that for any blunders of statement or interpretation which may be found in this and in the other sections of this paper, I alone am responsible.

² 1136: E. de Terreros y Pando, *Paleografía Española* (1758), p. 102, pl. 12 (530 of the Arab era). This is the date of the composition of the original work; the MS., so far as one can judge from an indifferent facsimile, appears to be of the thirteenth or fourteenth century. 1217: Terreros y Pando, p. 97, pl. 2. The script is certainly later. 1245: MS. Bibl. Strozzi, mentioned in nearly all the old treatises on the subject without verification, but doubted by modern authorities.

³ Tassin and Toustain, *Nouveau Traité*, iv, p. vii, describe a fine MS. of the eleventh century, containing the works of the Benedictine Guido d'Arezzo, who gives the numerals in a treatise on the art of reckoning. I have not succeeded in verifying this.

a scribe, copying from a MS. of a century or so before his time, may, if he is not familiar with the notation, reproduce forms which had really gone out of fashion. If he were much accustomed to use Arabic numerals he would be less likely to do this. This I think is the explanation of a very puzzling set, or rather sets, of numerals in a MS. of the late thirteenth century (Table V. 1). I confess that had I come across this MS. at the beginning of my search, I should have thought twice before going on. Here we have in use, alongside of a fully developed form of 2, a form like a pruning-hook, of which the only other instances which I have found are in MSS. of the twelfth, or, at the latest, early thirteenth century (Table II. 2, 3). Then there is a very curious form of 3, like the pruning-hook 2 with an extra line through it, alongside of a well-developed modern 3. To complete our perplexity comes a fully developed upright 7, beside the ordinary lambda-shaped form. The MS. contains elaborate astronomical tables, and the solution of the confusion probably is that the scribe was compiling from various MSS. It might be said that, if that were so, we should find the peculiar forms confined to certain columns, and not used along with the ordinary forms; but if he were familiar with only these ordinary forms he would be likely to intrude them here and there.

The upright 7 occurs in the tenth-century MS. which comes at the very beginning of the Tables; also in the two MSS. already mentioned as showing the pruning-hook 2 (Table II. 2, 3; in the latter we have also the lambda-7); in a MS. at Siena which has been dated to the thirteenth century (Table IV. 8); in an Italian MS. at Florence (Table VII. 16) which is generally admitted to be of the early fourteenth century, and which also shows the upright 4 and is, indeed, so far as the numerals are concerned, extraordinarily advanced. After that, I have failed to find any instances until after 1400 (see Table XI). Yet we need not say in despair that there is no rule; these upright 7s are quite exceptional, and the occurrence of one in a MS. is *prima facie* reason for suspecting a comparatively late date. If these exceptions serve to impress upon us the truth that scientific exactitude is not attainable in palaeography, they will do no harm.

The forms that afford the best criteria are 2, 4, and 7; next comes 5, but it is the most freakish of all figures, and therefore a little untrustworthy. The others are practically negligible.

Allowing for exceptions, it may be said that the three-stroke form of 2, as opposed to the old 7-shaped form, does not appear before the second half, and is quite rare before the end, of the thirteenth century. The transition is well seen in an English MS. of about 1300 (Table V. 7). By the middle of the fourteenth century the old 7-shaped form has practically disappeared (see, however, Table VI. 9).

As to 4,¹ there are a few examples in which a slight lifting of one of the legs

¹ Mr. George Macdonald, of the Scotch Education Office, calls my attention to a form of 4 resembling + used in certain Scotch accounts, *e.g.* those of the Lord High Treasurer in the Register House, Edinburgh, where the 4 in 1545 is so made, or Andrew Halyburton's Ledgers (1493-1503).

gives to the old form an appearance of the modern (*e.g.* Tables IV. 2, VI. 16). These are, however hardly misleading. The Florence MS. (Table VII. 16) has already been mentioned. The transition to the upright form begins very gradually after the middle of the fifteenth century in England (the latter half of Table VIII shows this clearly). Italy, however, is far ahead of other countries in this respect, showing a fully developed modern form both in monuments and in MSS. quite early in the fifteenth century.¹

Of 7 I have already spoken.

5 shows many fantastic forms, but the general essential of the sign is the same. A curious intrusion of a Roman V into the Arabic series is shown in an early thirteenth-century MS. (Table IV. 2). This is of interest in connexion with the probability that what we call the Arabic 5 was an adaptation of the late Roman form.²

The 7-shaped German form of 5 is well illustrated in Table X. In MSS. it is superseded early in the sixteenth century by the more modern form; elsewhere it lasts longer. It is of course an intelligible development from the older form; but as soon as the upright 7 became established, it had to disappear. The instances analysed in Tables X and XXII illustrate the conflict.

The series given in Table XIII from Greek MSS. are derived partly from Eastern Arabic, partly from Western sources. No. 2 is exactly the same as the series in the eleventh-century Chartres MS. (Table I. 7). Nos. 3 and 8 are purely Western in appearance, save for the inverted 7 in the latter. Nos. 1, 4, 5, and 6 point to an Eastern Arabic origin; note the circular form of 5 in two of them, and with some of the forms (2, 3, 4, 5, 7) compare those in the Berlin MS. (Table II. 6).

After the MSS. I have placed series from British monuments. Although the material is scanty, and I have by no means collected all the known instances, it is not out of a mere false patriotism that I have placed them first. The Wells numerals (Table XIV. 1) are among the most interesting, and probably the earliest to be found anywhere outside MSS., even if we allow that fashions of epigraphy are apt to change more slowly in monumental than in manuscript work. The upright 7 from Elgin (XIV. 4) may possibly be traced to foreign influence; it is certainly early for this island. The tendency to assimilate numerals to letters is noticeable in dates such as that of 1503 from St. Cross (Table XIV. 12) or that of 1534 from Eccleston (Table XIV. 20), and more especially in some of the brasses in Table XVI. The h-shaped 5 is found reversed in a date in Brading Church, Isle of Wight, which has been read Mld13, but which, as Mr. Peers points out, is really **A** (for Anno) 1513. (See Supplementary Table, LI. 13.)

¹ A Heidelberg MS. from Kloster Salem shows the rivalry between the old and the new form in the years 1494-1499, the scribe using one form, the miniator another. *Anzeiger für Kunde d. Deutschen Vorzeit*, 1867, p. 161.

² Found, *e.g.*, on coins of Justinian I, struck in A. D. 541-2 (W. Wroth, *Brit. Mus. Catal. of Imperial Byzantine Coins*, i, p. 31, no. 56).

Pages could be filled with instances of doubtful, misread, or misinterpreted dates on English monuments. I have relegated some of them to a footnote.¹

Next follow the examples from Germany and German lands, more especially Austria. The evidence from the latter country is very plentifully published in the *Mitteilungen der kaiserlich-königlichen Central-Commission für Erhaltung und Erforschung der Baudenkmale*, the first series and the Neue Folge, which I have abbreviated as *M.C.C.* and *M.C.C., N.F.* I have found no periodical giving such plentiful illustrations of monuments from Germany, with the result that examples of the use of Arabic numerals may seem to occur more frequently in Austria, as compared with Germany and other countries, than is really the case. Italy, for instance, is, I fear, poorly represented in my Tables, although a great deal of evidence exists, to my knowledge, in an unpublished form. Of the two countries, Germany and Italy, it is racially characteristic that while the Germans seem to

¹ The Helmdon mantelpiece, a stock subject for discussion in the eighteenth century (*Philosophical Transactions*, 1731, i, fig. 55, at p. 190), supposed by many to bear the date 1133, cannot from its style have been earlier than the late fifteenth century. There was a somewhat similar oak chimney-piece at Widel Hall, Herts., perhaps of 1516 (*op. cit.* 1735, p. 119), though the 16 has been explained as I. G. The most ludicrous things have been written about a cruciform arrangement of figures at Castle Acre Priory (J. H. Bloom, *Castle and Priory at Castle Acre*, p. 25), which might conceivably be meant for 1480, but is certainly not so early. The figures 1393 on a brick illustrated by Mr. Rider Haggard in *A Farmer's Year* (1906), p. 323, and since presented by him to the British Museum, appear from their style to date from the seventeenth century at the earliest. The iron scutcheon plate on the south door of the nave at Rendcombe Church, Gloucestershire, has six signs, of which the first, second, fourth, fifth, and sixth might be read as 10 417; but the third can hardly be explained as a figure. See *Arch. Journ.* vi. 291. A curious puzzle is presented by the date 1410 which was published in the *Antiquary*, xxxviii, p. 258, as from the brass of John de Campden in St. Cross, Winchester. No such date is to be seen on that brass, and all inquiry has failed to elicit an explanation. Either the facsimile given is a clever invention, for the forms are most plausible, or the person who sent it to the *Antiquary* has confused his notes as to the provenance of the date. It ought to be inquired into, as, if genuine, it (with the Fountains seal, Table L. 6) is the earliest English instance of the kind, saving the Wells numerals.

1485 occurs on a brass (of John Pulter) in a slab on an altar-tomb (of earlier date) in the north chapel of Hitchin parish church. The forms (modern 4 and 5) show that the numerals are later than the alleged date [Rubbing communicated by Mr. Murray Kendall]. The date 1489 given by Haines from a brass at Fressingfield, Suffolk, as being in Arabic numerals, is in Roman. 1490 on the brass of Wm. Fordmell, Vicar of Borden (Belcher, *Kentish Brasses*, i, p. 12), cannot be contemporary.

1265 on a bell at North Wootton near Wells (W. E. A. Axon, *Proc. Manchester Lit. and Phil. Soc.* 1876, pp. 173 ff.) is for 1625, as, Mr. H. B. Walters assures me, is proved by the work. The date 1489 on the bell at Eglingham, near Alnwick, also mentioned by Mr. Axon, is in Roman numerals. The signs which have been read 1508 on a bell at Rayleigh, Essex (Deedes and Walters, *Church Bells of Essex*, p. 40), are probably not numerals at all; the third sign looks like u or n. The reading I h u s (for *Jesus*) has been suggested, but is unlikely. I h n s for *Johannes* seems to have even less in its favour.

English dates which I have not found time or opportunity to verify or use, but which should be included in any corpus, are 1483 and 1494 from Fountains, 1489 and 1494 from Ripon, all with the old forms of 4 (*Notes and Queries*, ser. iv, p. 375). Mr. H. B. Walters informs me that early dates (for bells) occur on bells at Greystoke, Cumberland (1524), Wood Ditton, Cambridge (1544), and Elmley Castle, Worcs. (1559, now recast). Mr. G. L. M. Clauson has kindly procured for me rubbings of the dates on brasses in Eton College Chapel, viz. 1525, 1532 (Thomas Smith), 1545 (T. Edgcumb), and 1560 (Robert Stokins). The last shows the o with a slanting stroke through it.

be ahead in the practical use of the numerals, the Italians lead the way in the development of their forms. The fact that France produces hardly any examples cannot, I think, be wholly due to the accidents of search or publication.

German examples are also well represented because it happens to have been a German who published the most elaborate study of the whole subject which has hitherto appeared. Mauch, in his articles in the *Anzeiger für Kunde der Deutschen Vorzeit*¹ for 1861, deals very fully with the German evidence, drawn from architectural monuments, seals, etc. He has, however, little to say about MSS., and even his monumental instances are mostly drawn from a comparatively limited district. His articles are, nevertheless, the only serious attempt known to me at a systematic treatment of the subject.²

It is hardly necessary to mention the date 1007 on a gravestone at Katharein near Troppau, since it is universally rejected.³ But the following require to be dealt with:

1299. This, which appears to be a sculptor's mark on a gravestone of the Count of Katzenellenbogen, in the Schlossgarten at Biberich, seems to be very doubtful. [The only illustration I have seen is in Hefner-Alteneck, *Trachten*, i. Taf. 27.] I have not included it in my Tables.

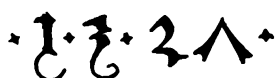


Fig. 1. Date at Weissenburg.



Fig. 2. Date at Pforzheim.

1327 (fig. 1). On the church at Weissenburg im Nordgau (Mittelfranken). The contemporaneity of this is with justice doubted by Mauch (*Anzeiger* (1861), p. 81). Cp. the 1439 of Table XVIII. 4.

1371 (fig. 2). Schlosskirche, Pforzheim. See *Anzeiger*, 1861, p. 83. The evidence as to this is highly unsatisfactory. Herr E. Wagner of Karlsruhe, who kindly made inquiries for me, elicited the fact that an inscription in memory of Luitgard Göldenerin with this date is now painted on the wall of the church; but it is uncertain whether it was always painted on the wall, or whether when the church was restored in 1880 the plaster was laid over the possibly still existing slab. The inscription is given by Gehres, *Kleine Chronik von Pforzheim* (Karlsruhe, 1811), p. 30. It is clear that the forms as they now stand are useless; but even those given in publications earlier than 1880 seem to me very doubtful for the date.

1398. This supposed date at Constanz is not contemporary, the context showing that the inscription cannot be earlier than 1462. See J. Marmor in *Anzeiger*, 1861, p. 268 f.

¹ Hereafter usually referred to simply as *Anzeiger*.

² Some information may also be gained from Denzinger's articles in the *Archiv des histor. Vereins von Unterfranken und Aschaffenburg*, ix (1847), pp. 163, 178.

³ *M.C.C.* xi (1866), p. xlvii; *Anzeiger* (1876), p. 34.

The dated German seals are among the most interesting and also the most treacherous examples with which we have to deal. In Germany and in Austria, in the second half of the fifteenth century, it became quite the fashion for any person or corporation, to whom a grant of arms was made, to place the date thereof on a seal.¹ There are, however, undoubted instances of the practice in the fourteenth century, which will be found in the Tables. Here we may deal with a few doubtful or otherwise interesting examples.

1235 (pl. XIX, no. 1). Seal of Gottfried von Hohenlohe. See *Anzeiger*, 1861, p. 48; 1866, p. 265; 1871, p. 261 f.; Albrecht, *Die Hohenlohe'schen Siegel des Mittelalters*, no. 6; Fürst Hohenlohe-Waldenburg, *Sphragistisches Album*, Beilage A zu Hohenlohe; G. A. Seyler, *Abriss der Sphragistik*, p. 28. No original impression is known; but there are or were *two examples of the matrix* in the Fürstlich Hohenlohe-Neuensteinsches Kunst- und Raritäten-Cabinet in Kirchberg a. d. J., one in copper, the other in silver; both 0.5 cm. thick and smooth at the back. Both matrices are the same, but one is better engraved than the other. One of these matrices seems to be mentioned as early as 1644. No other seals of the thirteenth century dated in this fashion are known. The work is extremely good. It has been suggested, in explanation of the early occurrence of these numerals, that Gottfried was frequently in Italy. That is no explanation, since the numerals would be as surprising in Italy as in Germany. The Trinity College, Cambridge, MS. (Table III. 1), supposing it to be rightly dated, shows that the forms of 2 and 3 are just possible in the first half of the thirteenth century. But I have found no other instance of this form of 2 so early. If the last figure is a 5 (and it can hardly be, as Seyler reads it, a 3 reversed, seeing that the engraver had just made one the right way), I can find no parallel to it *until the sixteenth century*, when it is furnished by the Brensbach date of 1526 (Table XXII. 12). The possibility of this seal being a forgery of the sixteenth century must therefore not be overlooked. It is strange that there are extant two matrices and no ancient impressions.

1320. Trostberg (pl. XIX, no. 8). The wax impression from the Germanisches Nationalmuseum, Nürnberg, shows clearly that we have to do with a sixteenth-century seal. With the looped forms of the numerals compare those in

¹ A list of dated seals from 1369 onwards is given by Mauch in *Anzeiger* (1860), pp. 13 ff. See also E. Melly, *Beiträge zur Sigillographie*, and the various volumes of the *M.C.C.* referred to in the descriptions of Tables XXII–XXVI. Outside Germany early seals with Arabic numerals are very scarce, if indeed they occur at all before the sixteenth century. England, curiously enough, offers an isolated example as early as 1410 (Table L. 6). G. Demay, *Inventaire des Sceaux de la Normandie* (1881), p. vii, gives 1503 (Philippe de Clèves, Seigneur de Ravenstein), 1511 (Denis, Abbé de Loos), and 1515 (George, Duke of Saxony) apparently as the earliest instances of the use of Arabic numerals for this purpose known to him! For some information as to German seals (which, however, reached me too late for incorporation) I have to thank Dr. E. Gritzner of Weimar; he notes, for instance, the seals of the city of Munich of 1478, and of Weissenhorn in Bavaria ("S' civium in Wessenhoren 1476"). Dr. Theodor Hampe has kindly enabled me to obtain reproductions of a certain number of seals in the Germanisches Nationalmuseum at Nürnberg.



1



3



2



4



5



6



7



8

GERMAN SEALS WITH DATES IN ARABIC NUMERALS

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Table XXII. 4, 15. The seal is mentioned in *Anzeiger* (1866), p. 265; by G. A. Seyler, *Abriss der Sphragistik* (1884), p. 28, and elsewhere, without suspicion.

1408. "Sigillum Universorum Civium in Marchekk." Melly, *Beiträge*, pl. i. and p. 37. Melly says "the work shows that the date 1408 cannot refer to the making of the seal, but to a renewal of the grant of arms, or else, more probably, it arose from an engraver's mistake for 1480".

1410. Gars. Written 14x (with the old form of 4). *M.C.C.* xix, p. 88. Not contemporary.

1439? (pl. XIX, no. 2). Seal of Otto von Henneberg, Germ. Nationalmus., Nürnberg. This is the identification given in *Anzeiger* (1859), p. 250, but the date is queried. The last digit looks like a 4. Further, Otto V, the only one who can be in question, was only two years old in 1439. He died in 1496. The date may be 1484. The inscription is "S. oct. von Gots gnade g̃ve und her v. henbg".

1449. Markt Veldkirchen. *M.C.C.*, p. cxxxiv. This has the modern 4, and looks altogether more modern than the date.

MCCCCA = 1470. Print from seal of Plebanus John of St. Moritz in Augsburg. On this, which is interesting from the point of view of notation, see below (p. 150).

1488. On a seal of the city of Baden (Lower Austria) commemorating the siege by the Turks in 1529. The date is meant for that of the Wappenbrief, but should be 1480. It has the upright 4. A similar seal with the right date, 1480, was engraved in 1566. *M.C.C.* ix, p. v.

Table XXVII records a few German examples from miscellaneous objects, some quite late, but interesting because of their fantastic forms.

The reproductions of examples from German paintings (Tables XXVIII, XXIX), as of those of Italy and the Low Countries, have been taken for the most part from the facsimiles in the official catalogues of the collections mentioned. These sources, supplemented by a few notes of my own from actual pictures, ill represent the mass of interesting material which this class of objects affords.

In Table XXX woodcuts, metal-engravings, and printed books have been lumped together, perhaps not very scientifically.¹ The list of examples from printed books might of course have been made enormously larger, but with doubtful profit.

Among the German coins and medals I have not included the Schaumünze of Maximilian and Mary of Burgundy bearing the date 1479, and the ages (19, 20) of the pair, because it is a later reproduction, based on the contemporary medal by Candida.

¹ My thanks are due to Mr. Pollard and Mr. Scholderer for information with regard to early printed books, both German and Italian. I am assured that the mark of Caxton, which appears to combine an ancient 4 with a modern 7, should not be regarded as embodying a date.

The series of Swiss coins, and of coins, jetons, and medals of the Low Countries, are in various ways interesting; the former (Table XXXIV. 1) as affording the earliest known instance of a Western coin proper with date in Arabic numerals;¹ the latter as showing a fairly continuous run of dates from the last quarter of the fifteenth century onwards, and illustrating the reluctance of the old forms of 4 and 7 to disappear.

The forms of the numerals 2, 3, 4, 5, which occur on certain *rifacimenti* of the famous late fourteenth-century medal of Constantine seem to me to belong to the early sixteenth century, and to be Flemish. Cp. *Num. Chron.*, 1910, pp. 115 f.

In connexion with these examples from the Low Countries I may notice the puzzling dates on the Flemish tapestry of the "Triumph of Chastity" in the Victoria and Albert Museum, to which Mr. Maclagan has directed my attention. The date 1507 (with the lambda-7) is quite normal, and suits the style of the work. But on the same piece is a date which can as it stands only be read as 1570 (with



Fig. 3. On a painting by Jean Fouquet.

the modern 7). As there is considerable space between the 7 and 0 it may be that the bottom stroke of a Z-shaped 2 was omitted in weaving, as Mr. Maclagan suggests, in view of the carelessness or illiteracy that is elsewhere perceptible in the inscriptions. The date would then be 1520, representing the date of the completion of the work. Other explanations suggest themselves (as a mistake of 1570 for 1507); but they are less probable.

Table XL includes a few medals, some of which are French, others perhaps Italian, while even in those which are certainly French Italian influence is strongly felt. French evidence is again curiously lacking. It is convenient here to note the graceful instance (1456) from the portrait by Jean Fouquet in the Liechtenstein Collection, which, since it hardly admits of tabulation, is reproduced in fig. 3. Another early date, 1461, is said to occur on a portrait by Nicolas Froment in the Uffizi.

Tables XLI and XLII are compiled, as I have already indicated, chiefly

¹ The earliest occurrence of a date in Arabic numerals on a coin is found in the reign of Roger of Sicily, 533 A.H. = 1138 A.D. See E. v. Zambaur, *Contributions à la Numism. Orientale*, *Num. Zeitschr.*, xxxvi, p. 83. But this occurs as part of an Arabic inscription. I owe the reference to Mr. J. Allan.

from official catalogues.¹ Table XLIII is mainly from Fortnum's *Majolica*.² Tables XLIV and XLV, on the other hand, are nearly all compiled from original medals, plaster casts, or good photographic reproductions. Research has confirmed much that seemed doubtful in this group; thus the Carrara medals, dated 1390, are now generally admitted to be contemporary.³ The incised dates on Table XLIV. 5, 6 cannot be doubted. The appearance of the old form of 4 in Table XLIV. 12, 13 is explained in the notes to the Table.⁴

Table XLVI, which it might have been hoped would be large, is rather inadequate. A certain number of additions will be found in Supplementary Tables L and LI. On the other hand, Italy affords one of the most striking instances of the necessity of some such collection as I have endeavoured to make: the date 800 on the sarcophagus of Pagavus Petrasanta at Milan, which is obviously and without question of late origin.⁵ I notice also the date 1322 on a piece of artillery (which was in existence at Mantua down to 1849) as being exceedingly doubtful in the form illustrated and accepted as genuine by Rocchi.⁶

A curious problem is presented by the 140 reproduced in fig. 4. The numerals are incised on the sole of the right sandal of a statuette of Marcus

¹ The date 1391, on a painting by Spinello Aretino, will be found in the Supplementary Table L. 5, having been recently sent me by Mr. A. H. S. Yeames. 1464 is to be seen on a painting by Antonazzo Romano at Rieti (*Rassegna d'Arte*, 1909, p. 43) and on the banner with Our Lady protecting Perugia painted by Benedetto Bonfigli (Heywood, *Perugia*, at p. 299).

² I have not included the two examples of 1519 on two pieces of Gubbio ware (Fortnum, p. 29) because of their suspiciously modern appearance.

³ See especially Guiffrey in *Rev. Num.* (1891), pp. 17-25, and J. von Schlosser in *Jahrb. d. kunsth. Samml. des A. H. Kaiserhauses*, xviii (1897), pp. 64 ff.

⁴ This table of Italian medals may claim to be fairly representative; but I have not been able to verify the following: 1455, Franc. Sforza (Armand, *Médailleurs italiens*, ii. 26. 1, perhaps not contemporary); 1460, Borso d'Este (Heraeus, pl. lii. 1); 1467, plaquette by Enzola (Armand, i. 46. 13); 1490, Unknown woman (Armand, iii. 183 D); 1498, Gioacchino della Torre (Armand, ii. 71. 10); 1498, Gianfrancesco della Rovere (Armand, ii. 106. 22); not to mention some later than 1500. The dates 1488 on a medal of Francesco Accolti and 1498 on one of Ser Ceccone de' Baroni, and indeed the medals themselves, are false. (See *Rev. Num.* (1895), p. 460, and *Burlington Magazine*, Oct. 1909, p. 31.) The 8s in the date on the Accolti medal are like a recumbent ∞ , a shape which comes in towards the end of the sixteenth century. See Table XII. 13.

⁵ F. Burger, *Gesch. des florent. Grabmals* (Strassburg, 1904), p. 34. Mr. A. H. S. Yeames has kindly reported to me a number of interesting examples; those of which I have been able to obtain clear photographs are entered in the Supplementary Tables. The others are from the armorial tablet in the Court of the Bargello at Florence: 1437, 1439, 1445, 1448, 1456, 1463, 1475, 1487. Other instances which I have noted, but not yet succeeded in verifying satisfactorily (even to the extent of learning whether they are in Arabic numerals at all), are: 1456, bust at Berlin, inscribed ALEXO DI LVCA MINI (Venturi, *Storia dell' arte ital.*, vi, p. 636, doubts the inscription); 1461, Berlin, terracotta copy of a Madonna by Bellano (Venturi, p. 487, suspects this inscription); 1475, tomb of Lorenzo Roverella, in church of San Giorgio di Ferrara, by Ambrogio da Milano (*ib.* p. 620); Cremona, Duomo, fragment of tomb of S. Arialdo, signed ZO. ANTONIO. AMADEO. F. OPVS. 1484 (*ib.* p. 901).

⁶ *L'Arte*, ii (1899), p. 348.

Aurelius on horseback, a copy of the famous statue on the Capitol.¹ The statuette (which is in the Vienna Museum) has been ascribed to L'Antico,²



Fig. 4. The date 1470 on a bronze statuette of Marcus Aurelius, Vienna Hofmuseum.

although the date creates serious chronological difficulties. However, in his splendid monograph³ on L'Antico, which has just appeared, Dr. H. J. Hermann definitely discards the attribution to L'Antico, chiefly because of the date. He urges that the figures must represent a date, not an inventory-number, since few collections at that period could have contained so many as 1470 objects of this kind. I may add that an inventory-number would be incised after the object had been acquired for the collection, whereas these figures have the appearance, at least in the photograph, of having been incised in the soft material of the original model. It is just conceivable that it was an opus-number, incised by the artist at the last moment before casting. The point, however, which chiefly concerns us at present, is this: if this is a fifteenth (*a fortiori* a sixteenth) century Italian bronze, how come these archaic forms to appear on it; forms that had long vanished from Italian arithmetic, unless the evidence marshalled in this paper contains even more serious gaps than I had suspected? There is nothing northern about the style of the bronze, although it is difficult to judge of such a matter in a close copy of an antique. Perhaps the most probable solution is that it is the work of a northern artist who had settled in Italy, but had not acquired the Italian style of writing.

Dr. Hermann points out that the statuette may well be connected with the repairs to which the statue was subjected in the reign of Paul II. These were begun in 1466, and as the work was still unfinished in 1470,⁴ the statuette may well be connected with the restorer's task. But whatever be the explanation of the numerals, analogies must be found before we can accept them as having been incised by an Italian in the fifteenth or early sixteenth century.

The Italian engravings and printed books do not offer much of interest, but the Italian reproduction of a German date in Table XLVII. 8 is worth noting. An important example of the year 1461 was recently brought to my notice by Mr. A. M. Hind, and will be found in Table LI. 1.

Table XLVIII should be used with great caution, both the authorities on which it is based, Rottiers and Belabre, being untrustworthy. But I could not bring myself to exclude the evidence from this outpost of Western culture. Italian influence was evidently strong there. As the knights left the island in

¹ I am obliged to Ritter A. von Loehr for the photograph from which the illustration is made.

² See, for instance, J. von Schlosser, *Werke der Kleinplastik in der Skulpturensammlung des A. H. Kaiserhauses*, i, p. 4, pl. x.

³ *Jahrbuch der kunsthist. Sammlungen des A. H. Kaiserhauses*, xxviii (1910), pp. 268, 271.

⁴ E. Müntz, *Les Arts à la Cour des Papes*, ii. pp. 27, 92 ff.

1522, it is improbable that any of their inscriptions were restored; the more is the pity that good facsimiles are wanting.

At the time when Arabic numerals were beginning to make their way into common use, and even before that, some people had realized the extraordinary obstacle that the Roman system of notation placed in the way of progress. Greek numeration, which is as much superior to Latin as it is inferior to Arabic, is sometimes used in Western MSS. Thus in the *Libri Catalogue* (Sotheby's, 1859) we find:

(a) No. 298 and pl. III. St. Cyprian, saec. VIII-IX (not VII-VIII as in the catalogue), numerical signs according to the ancient Greek alphabetical system.

(b) No. 299. St. Cyprian, now in the Bodleian. Greek numerals, P for 100, C for 110 (instead of 200), *stigma* sometimes for 7 (instead of 6). Both these are certainly Western MSS.

(c) No. 760 and pl. XXI. Pancratii martyris officium et passio. Saec. X. Greek letters up to Π with numerical values.

The Greek system, however, never found favour in the West. Still less did the invention (or conveyance) of an Englishman, John of Basing, who is said to have introduced "Greek" numerals. As a matter of fact they were nothing of the kind. Matthew Paris (*Chronica Majora*, ed. Luard, v. 285) is the authority for the statement. His system was a combination of a constant vertical with varying horizontal or slanting lines. With certain exceptions, multiplication by ten was indicated by reversing the sign; thus $\text{J} = 8$, $\text{L} = 80$. There was a special sign for the cipher. John of Basing's system falls into the same class with the semaphore-like system which some old writers call Chaldaean, and which seems to have been used by astrologers.¹

Finally, a few notes on certain peculiarities of notation may not be out of place.

The change of direction in writing numerals, from the old one of right to left to the modern one of left to right, is illustrated by a few cases. One is given by Hale, *Domesday of St. Paul's* (p. xiv): "Tabula Registri de Visitatione Maneriorum per Robertum Decanum, anno domini m. cc. xxii." Here the folios are numbered with Arabic numerals, written originally from right to left, the numbers being afterwards struck out, and a fresh series written in nearly the same character, but from left to right. Uncertainty as to whether they are contemporary with the date given has prevented their inclusion in the Tables.

The mixture of Roman and Arabic numerals is very common. In addition to instances which will be found in the Tables, I give the following from MSS.:

B.M. Royal 10 E. iii f. 294: caution dated a° dñi m° cccc^{mo} 6^{to}. English.

B.M. Royal 12 C. xv f. 264: owner's signature, anno dñi m° 400. English.

¹ See G. Friedlein, *Die Zahlzeichen und das elementare Rechnen der Griechen und Römer*, Erlangen (1869), p. 12 and pl. i. For other artificial systems see Wattenbach, *Anleitung zu lat. Paläogr.*⁴, p. 103.

B.M. Sloane 2478 f. 35 b.: mill' cc' 66"; cf. ff. 15, 15 b.

B.M. Harl. 2316. m" cc° 58, m° ccc° 43, &c. English mid. XIV.

Mabillon (*de re Dipl.* t. xv, p. 373, ed. 1681) gives the following example ("ex cod. Cavensi in cujus initio monachus Benedictinus crucem ferens pingitur") of chapter numbering: 1. 2. 3. 4. 5. 6. 7. 8. 9. x. xi. x2. x3. x4. xxx. xxxi. 302. 303. xxxx. 401. 405.

i. 5. iiii. = 1504. See Jakobs u. Ukert, *Beiträge zur älteren Litteratur oder Merkwürdigkeiten der herz. öff. Bibl. zu Gotha* (Leipzig, 1835), ii. 1. 64 note. m. ccc. 35 = 1335. *Id.* i. 2. 208.

i.4.LXIII, i.4.LXX, i.5.6 (= 1506): see Wattenbach, *Lat. Paläogr.*⁴, p. 104. For the omission of o in the tens' place see Table XVIII. 2.

m. cccc. 8 ii = 1482, Wattenbach⁴, p. 104.

An unusually interesting example is the woodcut representing the seal of John, priest of St. Moritz in Augsburg, with date A° m° cccc 7 (the 7 being of the *lambda* form). The original block of this is in the Hof-Bibliothek, Munich. Prints of these were used by John as an ex-libris, e.g. in books of *circa* 1472 and 1475. The date thus appears to be meant for 1470; the years of the decade might be added by hand. It cannot mean 1407. Libri, *Mon. ined.*, pl. lii; Schreiber, *Manuel*, 2039; *Catal.* 42.

The example from Mabillon shows the notation 302 for 32. Of the same kind is the date anno dni. 1000. 300. 80. 4° in a MS. in the Plimpton Collection (D. E. Smith, *Rara Arithmetica*, p. 444). The forms 610 (for 16) and the like (see note on Table IV. 1) are curiously systematic, evidently assuming that the numbers would go up to 100 at least. Less logical, but easily to be understood, are the following:

15011 on a majolica tile in the Civic Museum, Turin. Wallis, *Italian Ceramic Art: the majolica pavement tiles of the fifteenth century*, fig. 66.

15013 (for 1513). S. Antonino of Florence, *Summula confessionis*, printed at Paris.

15013. Date in colophon of *Confessionale* of S. Antonino, printed at Paris. Communicated by Prof. Pernice from a copy at Greifswald (No. 910). See Wattenbach⁴, p. 105.

As a modern parallel to these it may be worth mentioning that in a recent letter from a resident in Rome I read that "the Vittorio Emanuele Monument, like everything else, has got to be ready for the celebrations in 19011".

Readers who use the Tables which here follow are reminded that a certain number of examples, received too late for incorporation, will be found in the Supplementary Tables XLIX ff.

II. MSS.: XII-XIII CENT.

I	J	o	3	2	q	G	Λ	8	9	ϑ	XII early. 1143.
2	I	pp	r3	2	yy	66	77	8	9	o	XII-XIII.
3	I	pp	r3	2	yy	66	77	8	9	o	c. 1200.
4	I	pp	r3	2	yy	66	77	8	9	o	XII end.
5	I	pp	r3	2	yy	66	77	8	9	o	XII ² .
6	I	pp	r3	2	yy	66	77	8	9	o	

III. MSS.: XIII CENT.

I	1	zj	3	3	3	3	3	3	3	3	XIII ¹ .
2	I	7	3	3	3	3	3	3	3	3	c. 1230-50.
3	I	77	3	3	3	3	3	3	3	3	XIII.
4	I	77	3	3	3	3	3	3	3	3	1246.
5	I	7	3	3	3	3	3	3	3	3	c. 1250?
6	I	77	3	3	3	3	3	3	3	3	XIII ² .
7	I	7	3	3	3	3	3	3	3	3	XIII ² .
8	I	7	3	3	3	3	3	3	3	3	aft. 1264.
9	I	777	3	3	3	3	3	3	3	3	c. 1280.
10	I	zj	3	3	3	3	3	3	3	3	XIII late.
11	I	77	3	3	3	3	3	3	3	3	XIII late.
12	I	77	3	3	3	3	3	3	3	3	XIII late.
13	I	77	3	3	3	3	3	3	3	3	XIII end.
14	I	2	3	3	3	3	3	3	3	3	

I. MSS.: EARLIEST FORMS AND BOETHIAN APICES.

1	I	7	6	q	u	o	9	ns ^(u)	976.
2	I	7	6	q	u	o	9	ns ^(u)	X.
3	I	7	6	q	u	o	9	ns ^(u)	1077.
4	I	7	6	q	u	o	9	ns ^(u)	XI.
5	I	7	6	q	u	o	9	ns ^(u)	
6	I	7	6	q	u	o	9	ns ^(u)	XI.
7	I	7	6	q	u	o	9	ns ^(u)	
8	I	7	6	q	u	o	9	ns ^(u)	XI or XII.
9	I	7	6	q	u	o	9	ns ^(u)	beg. XII.
10	I	7	6	q	u	o	9	ns ^(u)	
11	I	7	6	q	u	o	9	ns ^(u)	XII?
12	I	7	6	q	u	o	9	ns ^(u)	XII.
13	I	7	6	q	u	o	9	ns ^(u)	XII ² .
14	I	7	6	q	u	o	9	ns ^(u)	c. 1200.
15	I	7	6	q	u	o	9	ns ^(u)	c. 1200.
16	I	7	6	q	u	o	9	ns ^(u)	?
17	I	7	6	q	u	o	9	ns ^(u)	?
18	I	7	6	q	u	o	9	ns ^(u)	?
19	I	7	6	q	u	o	9	ns ^(u)	XV.
20	I	7	6	q	u	o	9	ns ^(u)	
21	I	7	6	q	u	o	9	ns ^(u)	XVI early.

[illegible]

11	12	333	2	4	666	222	8	9	0	XIII late.
11	22	33	22	4	6	17	88	9	0	
1	2	3	2	4	6	7	8	9	0	
1	222	3	2	4	6	71	8	9	0	
1	77	3	2	4	6	1	8	9	0	XIV beg.
1	7	3	2	4	6	13	8	9	0	XIII-XIV.
1	7	3	2	4	6	1	8	9	0	c. 1300.
11	77	33	222	444	666	11	88	99	00	c. 1300.
1	7	3	2	4	6	1	8	9	0	XIII-XIV.
111	772 722	333	222	444	6	1	888	999	000	XIII-XIV.
1	22	33	2		6		8	99		XIII-XIV.
1	2	3	2	4	6	1	8	9	0	XIII-XIV.
1	7	3	2	4	6	1	8	9	0	XIII-XIV.

1	1	77	33	22	44	66	88	22	0	c. 1320-30.
2	1	7	3	9	9	6	88	9	0	XIV early.
3	1	77 ₂ ^{fm}	3	9	9	6	8	99	0	XIV.
4			33	4	4	6	^		0	XIV early.
5	1		33				^			1334.
6	1	22	33	44	44	6	^	99	00	XIV early.
7	1	77	3	4	4	6	^		0	c. 1330-40.
8	1	2	3	4	4	6	^	9	0	XIV.
9	1	7	333	4	4	6			00	mid. XIV.
10	1	2	3	4	4	6	^	9	0	XIV.
11	11	2	33	44	44	6	^	9	00	XIV.
12	11	2	3	4	4	6	^	9	0	c. 1350.
13	1	2	3	4	4	6	^	9	00	XIV.
14	1	2	3	4	4	6	^	9	0	aft. 1367.
15	1	2	33	4	4	6	^	9	00	1380.
16	11	2	33	4	4	6	^	999	00	1381.
17	1	2	3	4	4	6	^	79	00	XIV late.
18	11	7	3	2	2	6	^	3	0	XIV ¹ .

X. MSS.: XV CENT. (continued). (GERMAN.)

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21

IX. MSS.: XV CENT. (continued).

1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

XII. MSS.: XVI CENT.

1	11		33	4	77				00	1503.
2	1				5				0	1504.
3	111				555	6			00	1505-10.
4	1	2		2	h		8		0	1508.
5	1	2			h				0	1510.
6	1		3		5					1513.
7	1			4	5					1514.
8	1	2	2	4	55	6	7	8	0	c. 1515.
9	11				5		>			1517.
10	1		3		5					1523.
11	1	Z	3	2	5	6	^	8	0	c. 1524.
12	1	~	33	4	55	6	7	8	0	1545.
13	1	2	3	4	5	6	>>	007	0	c. 1560.

XIII. MSS.: GREEK.

1	1	2	3	4	5	6	7	8	9	0	XIV.
1	1	1	1	1	1	1	1	1	1	1	XIV.
2	1	1	1	1	1	1	1	1	1	1	XIV.
3	1	1	1	1	1	1	1	1	1	1	XV.
4	1	1	1	1	1	1	1	1	1	1	?
5	1	1	1	1	1	1	1	1	1	1	XV.
6	1	1	1	1	1	1	1	1	1	1	XV.
7	1	1	1	1	1	1	1	1	1	1	XV.
8	1	1	1	1	1	1	1	1	1	1	XV.

XI. MSS.: XV CENT. (continued). (ITALIAN.)

1	1	2	3	4	5	6	7	8	9	0	c. 1400-16.
2	1	2									1427.
3	1	~	2	55							c. 1400-35.
4	1	2		44							1440.
5	11	22	3	22							1444.
6	1	2	33	4	555						c. 1420-44.
7	1	22	3	5	5						c. 1456.
8	1	2	3	455							XV.
9	1	2	3	4							XV.
10	11	2	233	44	55						XV ¹ .
11	1		5								1473.
12	1										1478.
13	1	2	2	5							c. 1475.
14	111	222	33	44	555						c. 1476.
15	1										1478.
16	1										1480.
17	1	2	233	44	55	66	7	8	9	0	c. 1490.

XIV. BRITISH MONUMENTAL, XIII-1537.

1	11	7	3	22	43	6	^	88	9	0	XIII ² -XIV ¹ .
2	1			22	5			8			1445.
3	1			2	5		7			0	1448.
4	11						^	8			1470.
5	1						^				1487.
6	1							8			1487.
7	1								9		149?
8	1		7						9	0	1490.
9	1								9		1493.
10	1								9		1494.
11	1							8			1498.
12	1										1503.
13	1				h					0	1504.
14	1				5				9	0	1509.
15	11				5					0	1514.
16	1	2			5					0	1524.
17	1	2			5						1525.
18	1	2			5		^				1527.
19	1		3		5						1531.
20	1		3		5						1534.
21	1		7		h		7				1537.

XV. BRITISH MONUMENTAL, ETC., 1545-1592.

1	1	2	4	55					1545.
2	1			11					1552.
3	1			5		7			1577.
4	1			5		>	8		1587.
5	1	5		1				9	1592.

XVI. BRITISH BRASSES.

1	1								1447.
2		2		2		^			1454.
3				11		^			1472.
4	1			2		^		9	1481.
5	1			2				2	1487.
6	1			2				2	1489.
7	1			2				2	1493.
8	1			2				0	1510.
9	11			2				0	1510.
10	1			2				0	1538.

XVII. BRITISH BELLS.

1	1	2	3	4	5	6	7	8	1516.
2	1					6			1523.
3	1			4					1540.
4	1			2		6			1546.
5	1			2		7			1587.

XVIII. GERMAN. MONUMENTAL, 1388-1477.

1	1		3		2		8		1388.
2	1								1406.
3	1								1414.
4	1		3					2	1439.
5	1		3						1441.
6	1		3						1446.
7	1		3						1451.
8	1		3						1453.
9	1		3						1454.
10	1		3						1454.
11	1		3						1458.
12	1		3						1464.
13	1		3						1465.
14	1		3						1466.
15	1		3						1467.
16	1		3						1470.
17	1		3						1470.
18	1		3						1470.
19	1		3						1473.
20	1		3						1474.
21	1		3						1476.
22	1		3						1477.

XIX. GERMAN: MONUMENTAL, ETC., 1477-1495.

1	+								1477.
2	+								1479.
3	+								1480.
4	+								1480.
5	+								1481.
6	+								1481.
7	+								1482.
8	+								1482.
9	+								1484.
10	+								1484.
11	+								1486.
12	+								1486.
13	+								1487.
14	+								1487.
15	+								1488.
16	+								1488.
17	+								1490.
18	+								1491.
19	+								1491.
20	+								1492.
21	+								1493.
22	+								1493.
23	+								1495.

XXI. GERMAN MONUMENTAL, ETC., 1504-1520.

1	/					4	5	1504.
2	I						ss	1505.
3	l						5	1505.
4	l						5	1505.
5	l						u	1506.
6	l						3	1506.
7	l						5	1506.
8	l						5	1506.
9	l						5	1506.
10	l						5	1506.
11	l						5	1507.
12	l						5	1507.
13	l						5	1508.
14	l						5	1509.
15	l						5	1510.
16	l						5	1510.
17	l						5	1511.
18	l						5	1513.
19	l						5	1513.
20	l						5	1513.
21	l						5	1516.
22	l						5	1520.
23	l						5	1520.

XX. GERMAN MONUMENTAL, ETC., 1495-1503.

1	l							1495.
2	x							1496.
3	l							1497.
4	l							1497.
5	l							1497.
6	l							1497.
7	l							1497.
8	l							1497.
9	l							1497.
10	l							1497.
11	l							1498.
12	l							1499.
13	l							1499.
14	l							1499.
15	l							1499.
16	l							1501.
17	l							1499.
18	l							1500.
19	l							1500.
20	l							1501.
21	l							1502.
22	l							1502.
23	l							1503.

XXII. GERMAN MONUMENTAL, ETC., 1521-1544.

1	II	Z		5	6					1521.
2	I	Z		5						1521.
3	1	55		1						1522?
4	1	2		5						1523.
5	1	Z		7						1524.
6	1	1		2						1524.
7	1	Z		5						1524.
8	1	Z		5						1524.
9	1	Z		5						1524.
10	1	Z		5						1524.
11	1	Z		5						1524.
12	1	Z		5						1526.
13	1	Z		5						1528.
14	1	Z		5						1529.
15	1	Z		5						1533.
16	1	Z		5						1534.
17	1	Z		5						1534?
18	1	Z		5						1536.
19	1	Z		5						1537.
20	1	Z		5						1541.
21	1	Z		5						1542.
22	1	Z		5						1542.
23	1	Z		5						1543.
24	1	Z		5						1544.

XXIII. GERMAN SEALS, 1331-1453.

1	II									1331.
2	I									1351.
3	I									1368.
4	I									1369.
5	I									1405?
6	II									1412.
7	I									1425.
8	I									1425.
9	I									1433.
10	I									1433.
11	I									1436.
12	I									1440.
13	I									1444.
14	I									1444.
15	I									1444.
16	I									1446.
17	I									1446.
18	I									1450.
19	I									1450+.
20	I									1452.
21	I									1453.

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VOL. LXII.

1	I				5		7		0	1507.
2	I			2	5					1514.
3	Y				5		4			1517.
4	II							99		1519.
5	I	Z			5		1			1527.

XXXVII. GERMAN: VARIOUS.

[illegible]

XXXVIII. GERMAN PAINTINGS, 1435-1508.

1	1		3	2	2	2	1	1435?
2	1				2	2	6	1446.
3	1				2	2		} 1449.
4	1				2	2		
5	1		3		2	2	8	1483.
6	1				2	2	2	1487.
7	1				2	2	2	1488.
8	1				2	2		1491.
9	1		3		2	2		1493.
10	1				2	2	8	1498.
11	1	2			2	2	9	1499.
12	1		3		5	5	0	1503.
13	1				5	5	0	1504.
14	1				5	5	0	1506.
15	1				5	5	0	1506.
16	1				5	5	0	1507.
17	1				5	5	0	1507.
18	1				5	5	0	1507.
19	1				5	5	0	1507.
20	1	2			7	7	8	1508.
21	1				5	5	8	1508.

XXIX. GERMAN PAINTINGS, 1509-1529.

1	1				5					0	1509.
2	//				5					0	1510.
3	III				5						1511.
4	III				5						1511.
5	III				5						1511.
6	III				5						1511.
7	II				5						1512.
8	II				5						1512.
9	II				5						1512.
10	//				5						1514.
11	I				5						1514.
12	1				5						1515.
13	1				5						1515.
14	II				7						1515.
15	II				5						1516.
16	II				5						1519.
17	1				5					0	1520.
18	I				5						1526.
19	I				5						1528.
20	I				5						1528.
21	I				5						1529.

XXX. GERMAN PRINTED BOOKS,
WOODCUTS, ETC.

1	1				2							1464.
2	1				2							1470.
3	1				2							1470.
4	1				2							1471.
5	1				2							aft. Oct. 1473.
6	1				2							1474.
7	1				2							1477.
8	1				2							1479.
9	1				2							1481.
10	1				2							1482.
11	1				2							1488.
12	1				2							1496.
13	1				2							1499.
14	1				2							1499.
15	1				2							1500.
16	1				2							1503.
17	1				2							1504.
18	1				2							1507.
19	1				2							1508.

XXXII. GERMAN COINS, 1505-1514.

1	1			5					0	1505 Hungary.
2	1		6	7					0	1506 Goslar.
3	1		6	6					0	1506 Bavaria.
4	1		6	5					0	1506 Baden.
5	1		6	5					0	1506 Lübeck.
6	1			7			7		0	1507? Hungary.
7	1			5			7		0	1507 Frankfurt a. M.
8	1			5				8	0	1508 Isny.
9	1			7						1511 Bremen.
10	1	5		7						1512 Münsterberg.
11	1	2		5						1512 Lorraine.
12	1		3	5						1513 Salzburg.
13	1			5	2					1514 Hungary.
14	1			5	4					1514 Nördlingen.

XXXI. GERMAN COINS, 1484-1504.

1	1		4		8					1484 Austria.
2	1	6	4		8					1486 Austria.
3	1		2		8	2				1489 Hungary.
4	1		4		8	2				1489 Cologne.
5	1	2	2			2				1492 Frankfurt a. M.
6	1	2	2			2				1492 Aachen.
7	1		2	2	2	2				1497 Brandenburg- Anspach.
8	1		2			2				1499 Bremen.
9	1			7					0	1500 Jülich u. Berg.
10	1			5					0	1501 Brandenburg- Anspach.
11	1	2		7					0	1502 Lübeck.
12	1		2	7					0	1504 Mainz.
13	1		2	7					0	1504 Hesse.
14	1		4	5					0	1504 Brandenburg- Anspach.
15	1		2	5					0	1504 Salzburg.

XXXV. LOW COUNTRIES: COINS, ETC.,
1474-1482.

[illegible]

1424
St. Gall.

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XXXVI. LOW COUNTRIES:
COINS, 1482-1490.

[illegible]

XXXVII. LOW COUNTRIES:
COINS, ETC., 1491-1505.

[illegible]

XXXVIII. LOW COUNTRIES:
COINS, ETC., 1506-1596.

1	1			4	6	^		0	1506.
2	1			7		7		0	1507.
3	1			>				0	1507.
4	1			S			9	0	1509.
5	1			4			9	0	1509.
6	1			7				0	1510.
7	1			4					1512.
8	1			S					1512.
9	1			4					1512.
10	1			5					1513.
11	1			S					1513.
12	1			S					1514.
13	1			S					1515.
14	1			S			7		1517.
15	1			S			8		1518.
16	1			7				0	1520.
17	1			4					1521.
18	1			S					1525.
19	1			4					1525.
20	1			4					1544.
21	1			4					1546.
22	1			3			9		1596.

XXXIX. LOW COUNTRIES: PAINTINGS.

1	1	2	3	8						1432.
2	1	2	3	8						1433.
3	1		3	8						1434.
4	1		3	8						1438.
5	1			8						1446.
6	7	2		8						1462.
7	1			8						1474.
8	1			4						1514.
9	1									1516.
10	1	2	3							1523.
11	1	2								1528.

XL. FRENCH MEDALS.

1	1		4	5		8			1485.
2	1		4	8		8			1486.
3	1		4				9		1493.
4	1		4				9		1494.
5	1		4				9		1499.
6	1	2							1512.
7	1	2							1512.
8	1								1518.

XLII. ITALIAN PAINTINGS, 1521-1531.

1	11	2		4	ε				1521.
2	1	22		4	5				1522.
3	1	2	3		5				1523.
4	1	2			5	6			1526.
5	(1)	2	3		5				1531.

XLIII. ITALIAN MAJOLICA.

1	1	22	ε	4	4	8	99	0	mid. XV.
2	1			1	8	8	9	0	1487.
3	1			4	Σ	Σ	9	0	1489.
4	1			4					1491.
5	1		3	4					1493.
6	11		3	4				0	1503.
7	11	2			7	8	9	0	1508.
8	1								1509.
9	1		3					0	1513.
10	1	2	3			8			1513.
11	11			4					1518.
12	1	2							1524.
13	1	2	6						1526.
14	1	2				8			1528.
15	1	2				8			1528.
16	1	3						0	1530.

XLII. ITALIAN PAINTINGS, 1472-1516.

1	1	2		4		7			1472.
2	1	3		4		7			1473.
3	1			44		7			1474.
4	1			4	5	7			1475.
5	1			4		77			1477.
6	1			4		7			1477.
7	1			4	5		8		1485.
8	1			4		7	8		1487.
9	1			4			8	9	1489.
10	1			4		6		9	1496.
11	1			4		7		9	1497.
12	1			4		7		9	1497.
13	1			4					1499.
14	1	2		4					1502.
15	1	2		4	5			0	1502.
16	11			4	5			0	1510.
17	11			4	5				1511.
18	11			4	5				1511.
19	1			4	55				1515.
20	11			4	55				1515.
21	1			4	5	6			1516.

XLIV. ITALIAN MEDALS, 1390-1497.

[illegible]

XLV. ITALIAN MEDALS, 1498-1549.

[illegible]

XLVI. ITALIAN: VARIOUS.

I	I	Z	3	4				7	8			I423.
2	II	~		4								I428.
3	I			4	S					9		I459.
4	I			4				7				I471.
5	I			4				>				I474.
6	I			4	S					9		I495.

1	I	Z	3	4	5	6 _{med}	7 _{med}	8	9	0	c. 1467
2	I	Z	3	4	5	6	7	8	9	0	c. 1477
3	I	2	33	4	5	6	7	8	9	0	1478.
4	I	2	3	4	5	6	7	8	9	0	1479.
5	I	2	3	4	5	6	7	8	9	0	1484.
6	I	2	3	4	5	6	7	8	9	0	1491.
7	I	2	3	4	5	6	7	8	9	0	1492.
8	I	2	3	4	5	6	7	8	9	0	1509.

XLVIII. INSCRIPTIONS FROM RHODES.

1	I											1447.
2	I											1457.
3	I											1459.
4	I											1489.
5	I											1490.
6	I	2										1492.
7	I											1494.
8	I											1495.
9	I											1497.
10	I	2										1502.
11	I											1506.
12	I											1509.
13	II	2										1511.
14	I											1515.
15	I											1517.
16	II											1518.
17	I		3									1519.
18	I	2										1520.

XLIX. GERMAN: SUPPLEMENTARY.

1	I	33									1383.
2	I										1419.
3	I										1484.
4	I	Z									1492.
5	I	33									1493.
6	I										1497.
7	I										1498.
8	I										1514.

L. MISCELLANEOUS AND SUPPLEMENTARY.
XIII-XV CENT.

1	I	Z	3									c. 1260?
2	I	2	3									1276.
3	I	2	3									1326.
4	I	2	3									1342.
5	I		3									1391.
6	II											1410.
7	II											1417.
8	I											1444.
9	I											1451.
10	I											1451.
11	I											1452.
12	I											1453.

LI. MISCELLANEOUS AND SUPPLEMENTARY.
XV-XVI CENT.

1	1	22	3	4	5	6	7	8	9	0	1461.
2	1			4		6	7				1467.
3	1			4			7			0	1470.
4	1			2				8			1485.
5	1			8				8	9		1489.
6	1	2	3	2	4	6	Λ	8	9	0	1491.
7	1	2		2					9		1492.
8	1	2		2					9		1492.
9	1			2			Λ		9		1497.
10	1			2			Λ		9		1497.
11	1			2				8	9		1498.
12	1			2					9		1499.
13	1		3		4						1513.
14	1	22			4						1522.
15	1	2			4	6					1526.
16	/		3		5					0	1530.
17	11		3		1						1531.

DESCRIPTION OF THE TABLES

TABLE I. MSS.: EARLIEST FORMS AND BOETHIAN APICES.

1. 976. Escorial d I 2. Codex Vigilanus, written in the year 976 in the monastery of Albelda near Logroño. See P. Ewald, *Neues Archiv der Gesellsch. f. ält. deutsche Geschichtskunde*, viii (1883), p. 357. The forms are described as the Indian figures, quibus designant unumquemque gradum cuiuslibet gradus. Quarum hec sunt form(e): 987654321. Ewald connects the form for 5 with the Roman V. Since he does not say that the year 976 is that of the Spanish era, we must assume that it is of the usual Christian era. 2. X c. Zürich, Universitätsbibl. (St. Gall MS.). See Pertz, *Archiv*, vii (1839), p. 364. Cp. G. Friedlein, *Gerbert, die Geometrie des Boethius und die indischen Ziffern* (Erlangen, 1861), pl. vi. 13. From fol. 50' of Angilberti carmen de Karolo M. Pertz describes these as the earliest Arabic numerals known to him. 3. 1077. Vat. 3101. A. Berthelot, *Mélanges de l'École franç. à Rome*, v (1885), p. 193. 4, 5. XI c. Erlangen (ex Altdorf), 288. See Friedlein's *Boethius* (1867), p. 397 (forms used in the text).

of the MS.); also Friedlein, *Gerbert, &c.*, pl. vi. 1, 2; Woepcke, *Mém. sur la propagation des chiffres indiens* (Paris, 1863), p. 49 (after Mannert); H. Hankel, *Zur Gesch. d. Math.* (1874), p. 325; Cantor, *Math. Beiträge zum Kulturleben der Völker* (1863), p. 200. **6, 7.** XI c. Chartres. See Chasles, "Aperçu hist. sur l'origine et le développement des méthodes en Géométrie" (*Mém. de l'Acad. roy. de Bruxelles*, xi, 1837, p. 467). See also Friedlein, *Gerbert, &c.*, pl. vi. 3, 4. **8.** XI c.-XII c. Reg. Vat. 1661. Liber Abaci. A. Berthelot, *Mélanges de l'École franç. à Rome* (1885), p. 193. Dated XI c. by Pertz, XII c. by Berthelot. **9, 10.** XII c. (beginning). Paris, anc. fonds latin no. 7193 (ex Colb. 4313). De abaco. Natalis de Wailly, ii, pl. vii a. **11.** XII c. (?) B.M., Arund. 343 (original burnt in 1865; the date cannot therefore be verified). From T. Wright, *Essays on Archaeological Subjects*, ii, p. 65. **12.** XII c. Vat. 3123. A. Berthelot, *Mélanges de l'École franç. à Rome* (1885), p. 193. **13.** XII c. (2nd half). Bibl. Alessandrina (Rome), no. 171, fol. 1. The apices of Boethius used without abacus, and with position values. E. Narducci, *Mem. Accad. Lincei*, Cl. sci. fis. &c. (1877), p. 503 f. **14.** c. 1200. Louvain. See Lethaby, *Proc. Soc. Ant.* 1906 (xxi), p. 201. **15.** c. 1200. Paris, MS. Fonds St. Victor 533. Regula Abaci. See Chasles in *Comptes Rend. de l'Acad. des Sciences*, xvi (1843), p. 238. **16, 17.** Paris, 7377 c and 7185. Boethius. These series have been published by Cantor in *Zeitschr. f. Math. u. Physik*, iii, pl. iv, and in his *Math. Beiträge zum Kulturleben der Völker* (1863), p. 206 (fig. 41). The variation between the facsimiles throws doubt on their accuracy. Cp. also Friedlein, *Gerbert, &c.*, pl. vi. 5 and 6. Date and provenance are not stated. **18.** Date not ascertained. From a MS. belonging to Dr. Mead. See *Philosophical Transactions*, 1735, plate ii (at p. 122). **19, 20.** XV c. Vat. 4539: table following letter to Constantine on the abacus; and forms from text of Liber Abaci. A. Berthelot, *Mélanges de l'École franç. à Rome* v (1885), p. 193. **21.** Temp. Leonis X. B.M., Lansd. 842 B, fol. 57 b. Italian. De ratione abaci.

TABLE II. MSS.: XII-XIII CENT.

1. XII c. (early). Vat. 1890, f. 140; fragment of Conradi Urspergensis chronicon, probably written in neighbourhood of Salzburg. Pertz, *Archiv d. Gesellsch. f. ält. deutsche Geschichtskunde*, v (1824), p. 160 and pl. i. 4. Wattenbach, *Anleitung zur latein. Paläographie*⁴, p. 102. **1.** Prou, *Manuel*, p. 156. **2.** 1143. Vienna, Bibl. Palat. Computus. T. Sickel, *Mon. Graph.*, Fasc. viii, Tab. 16; *Wiener Sitzungsber.* xxxviii. 171. **3.** End of XII c.—beg. of XIII c. Munich, cod. lat. 14733 (cod. Emmeran. G. 117). Böhmer, *Fontes rer. Germ.* iii, p. lxxv; Pertz, *Mon. Germ.* SS. xvii, p. 578 and plate at p. 184; Wattenbach⁴, p. 102. Written by Hugo of Ratisbon, who appears as a witness 1207-1216. **4.** c. 1200. Heidelberg (Salem), ix. 23. Cantor, *Zeitschr. f. Math. u. Physik*, x. 1; Wattenbach⁴, p. 102. **5.** XII c. (end). W. Schum, *Exempla Codicum Amplonianorum Erfurtensium* (Berlin, 1882), no. xiii, p. 7. From the astronomy of Albumazar. Probably German. **6.** XII c. (second half). Berlin, cod. lat. fol. 307, ff. 6, 9, 10, 28. Astronomical tables. French. See Bethmann in Pertz, *Archiv*, viii. 832; Wattenbach⁴, p. 103; V. Rose, *Verzeichnis d. lat. Hdschr. der kgl. Bibl. zu Berlin*, ii, p. 1177, no. 956. The figure which is given by the earlier authorities as 2 is interpreted by Rose as 4, and vice versa. So far as the 2 is concerned, the earlier interpretation is confirmed by the preceding MS. in this table and by Arabic analogy. Dr. Regling has very kindly examined the MS. for me, but this point was not in question at the time.

TABLE III. MSS.: XIII CENT.

1. XIII cent. (1st half). Trinity Coll., Camb. (M. R. James, *Catal.* ii, no. 940, p. 355). The numerals are given under the words *Igin, Andras, Ormis*, &c., with the Roman equivalents written after each. From drawing by Mr. Z. N. Brooke. **2.** c. 1230-50. B.M., Eg. 2261, f. 225 b. Algorism. English. **3.** XIII c. B.M., Add. 25031. English. **4.** 1246. B.M.,

Royal 8 A. viii, f. 105. Note of purchase of the book. English. 5. XIII c. (about middle). B.M., Royal 3 A. v, f. 67 b. English. Dated by some to late XIII or early XIV. 6. XIII c. (2nd half). B.M., Arund. 292, f. 107 b. English. The numerals are drawn laboriously, as if they were unfamiliar. 7. XIII c. (2nd half). B.M., Arund. 332, f. 68. Joh. de Sacrobosco. English (Durham). 8. XIII c. (after 1264). B.M., Add. 27589, f. 28. Algorism. English. 9. c. 1280. S. C. Cockerell Collection, English Bible (probably York). Cp. *Proc. Soc. Ant.* xxi (1906), p. 201 (where the forms have been somewhat schematized). 10. XIII c. (late). B.M., Royal 12 E. xxv, ff. 32-59. This scribe uses Roman numerals for all above 9, also sometimes ix. The early form of 2 occurs only once (f. 33). Probably English. 11. XIII c. (late). B.M., Harl. 2385, ff. 26-31 b. Probably English. 12. XIII c. (late). B.M., Royal 12 E. xxiii, f. 2. English. 13, 14. XIII c. (end). B.M., Royal 12 C ix. Joh. de Sacrobosco, *Computus*. Probably English. The diagrams (14) are in a different hand, perhaps that of a more skilled mathematician than the copyist of the text.

TABLE IV. MSS.: XIII CENT. (*continued*).

1. XIII c. (beg.). B.M., Royal 8 B. xix. English or French. Contemporary quire-numbering. The first 13 quires (of 8 leaves each) are numbered i', ii', . . . xiii' on the last page of each quire; then come 410 = 14 (f. 112 b), 510 (f. 120 b), 610 (f. 128 b). 2. XIII c. (early). B.M., Royal 15 B. ix, f. 77 b. Algorism. English or French. Note the Roman V. By some authorities dated as early as XII cent. 3. XIII c., before 1271. Paris, anc. fonds latin, 7198; kalendar on f. 8. French. N. de Wailly, *Él. de Pal.* pl. vii. Cp. Lethaby, *Proc. Soc. Ant.* 1906 (xxi), p. 201. 4. XIII c. (end). B.M., Harl. 3647, ff. 2 foll. (*compotus manualis*), 17 (*algorismus*). French. 5, 6. XIII c. (about end). B.M., Harl. 4350, ff. 16, 6 b, &c. French. 7. 1256. Paris, lat. 16334 (Analysis and index of works of St. Augustine). Prou, *Manuel*, pl. xviii. No instance of 0 occurs in the facsimile. 8. XIII c. Siena (Bibl. Com.). *Anzeiger für Kunde d. Deutschen Vorzeit*, xviii (1871), p. 261; W. Wattenbach, *Anleitung zur lateinischen Paläographie*⁴, p. 102. 5; Prou, *Manuel*, p. 156. 9, 10. 1272. B.M., Harl. 531, ff. 1, 7, 30, 32 (dates and numerals in text of Sacrobosco). German. 11. c. 1260-1270. B.M., Royal 12 E. iv. Provenance uncertain. Evidently an exercise in ornamental figuring. A peculiar form of 2 occurs on f. 4 b. 12. XIII c. Libri, Catalogue (Sotheby's, 1859), p. 145, no. 665, pl. xxiv and xxix. *Mathematici veteres*. Not of 1170 as stated. Probably English. Mixture of Arabic and Latin numerals. Wattenbach⁴, p. 102.

TABLE V. MSS.: XIII-XIV CENT.

1. XIII c. (end). B.M., Royal 7 F. viii, ff. 182-188. Works of Roger Bacon. English, after 1268, probably towards end of XIII c. Astronomical tables. More than one system of numerals used; it would appear that we have tables compiled from various sources. 2. Beginning of XIV c. (temp. Edw. I-II). B.M., Cotton Vesp. A. ii, fol. 2. "Calend. Rogeri Baconis." Probably English. Might conceivably have been written in the closing years of the XIII cent., but beginning of XIV is much more probable. 3. Late XIII or early XIV (more probably the former). B.M., Royal 8 C. iv, f. 36 b. Joh. de Sacrobosco. Probably English. 4. c. 1300. B.M., Add. 35179. English. 5. c. 1300. B.M., Royal 12 F. xv, f. 143. Probably English. Evidently an exercise in writing the numerals. 6. Early XIV c. (possibly late XIII c.). B.M., Cotton Vit. A. i, f. 25 b. Carmen de Algorismo. English. 7. Late XIII or beg. XIV c. B.M., Royal 10 B. vii. Fishacre. English. See ff. 6 b foll., 226 b foll., 285, 327, 380. Shows the transition from the old to the modern 2. 8. End of XIII or beg. of XIV c. B.M., Harl. 505, ff. 5 b-14. English. 9. End of XIII or beg. of XIV c. B.M., Harl. 3735, f. 51. Algorism. Probably French. 10. XIII-XIV c. B.M., Add. 30380. Joh. de Sacrobosco. German.

TABLE VI. MSS.: XIV CENT. ENGLISH.

1. c. 1320-1330. B.M., Royal 12 E. XXI, ff. 74 foll. English. 2. XIV c. (early). B.M., Sloane 2478, ff. 15, 15 b, 27, 35 b. English. 3. XIV c. B.M., Royal 13 B. vi. Pagination. Later form of 2 occurs on f. 302. English (Lincoln). 4. XIV c. (early). B.M., Royal 12 E. 1, ff. 159-165 b. English. 5. 1334. B.M., Royal 2 C. v. Note (English) of the lending of the volume (Nich. de Gorram, Postille in Psalterium) to Mag. Th. Duraunt. 6. XIV c. (early). B.M., Harl. 13, ff. 31, 75. Astronomical tables. English. 7. c. 1330-1340. B.M., Harl. 7322, ff. 152 foll. English. 8. XIV c. B.M., Harl. 3353, f. 76 b. Algorism. English. 9. XIV c. (mid.). B.M., Harl. 2316, ff. 2 b-11 b. English. 10. XIV c. B.M., Cotton Cleop. B. vi, f. 237. Sacrobosco. Probably English. 11. XIV c. B.M., Royal 7 D. XXI, f. 174 b. Algorism. English. 12. c. 1350, probably. B.M., Royal 12 F. xvii. English. 13, 14. Late XIV or early XV. B.M., Cotton Vesp. E. vii, f. 5 (Diameter terrae); f. 9, Kalendar by Thomas Somur from nativity of Richard II; therefore perhaps soon after 1367, but may be early XV. 15. 1380. B.M., Royal 2 B. viii, ff. 1, 2 b. Psalter, with Kalendar by John Somour, composed 1380. English. 16. 1381. B.M., Burn. 310. Gesta Britonum of Nennius, written at Finchale by a Breton, Guillelmus du Stiphel. English. 17. XIV c. (late). B.M., Harl. 80, f. 46 b. English. 18. XIV c. (first half). Cod. Magl. Cl. vii, no. 17, f. 33 b; on a tablet held by figure of 'Arismetica'. Perhaps English. Formerly assigned to XI c. (!). C. Paoli, *Arch. Stor. Ital.* (IV Ser., vol. 7) 1881, pp. 277-280.

TABLE VII. MSS.: XIV CENT. FRENCH, GERMAN, ITALIAN, ETC.

1. XIV c. (early). B.M., Burn. 275, f. 667 (= 336). Illumination (first row). French. Other forms (second row) in the text passim. 2. 1301 (just after). B.M., Royal 12 C. xvii. Algorism. French. 3. 1311. B.M., Sloane 3097, ff. 61-63 and elsewhere. Liber de conservacione vite humane, completed die innocencium 1311 (f. 61). French. 4. XIV c. (late). Paris, anc. fonds latin 7277. N. de Wailly, ii, pl. vii c. M. Omont writes that the MS. is after 1367 and before 1420, and was written in the N. of France or neighbourhood thereof, probably at Tournai. 5. XIV c. (early). B.M., Add. 11284, ff. 2-8. Written at Cambron Abbey in Flanders. Both forms of 2 occur, but the old form more commonly. 6. 1303. Sigmaringen MS. *Anzeiger f. Kunde d. Deutschen Vorzeit*, 1867, p. 239; Wattenbach⁴, p. 102. 7. XIV c. (early, after 1303). B.M., Arund. 268, ff. 41 b-67. Mathematical treatise. German. 8. c. 1350. Salzburg MS. (cod. Iuvaviensis S. Petri v^a 7, fol. 124 b). Treutlein, *Gesch. uns. Zahlzeichen*, plate, no. 8. 9. XIV c. (end). Berlin, lat. fol. No. 322. Wattenbach⁴, p. 102, no. 7; Prou, *Manuel*, p. 156. 10. XIV c. (early). B.M., Royal 12 C. xviii. Astrology. Provenance uncertain (some northern country). 11. c. 1325-30. Icelandic. Algorismus. Hauksbók, ed. by Finnur Jonsson, p. 417. 12. 1315 or 1325. Endorsement on an English warrant dated Feb. 4, 1325; written (13 x 5) by an Italian. Possibly a mistake for 13 xx 5. *Arch. Journ.* vii, p. 85. 13. 1327. B.M., Arund. 115. Italian. 14, 15. XIV c. B.M., Harl. 3814, ff. 4, 3 b, 5 b, 11 b. Probably Italian. 16. XIV c. (beg.). Florence, Bibl. Naz., fondo Conventi soppressi, Badia Fior., 2616. C. 1, from which MS. Boncompagni edited the Liber Abaci of Leonardo of Pisa. *Anzeiger f. Kunde d. Deutschen Vorzeit*, 1871, 261, and private communication from Sig. Enrico Costa. 17. 1382. B.M., Add. 37495. Italian. Geoffrey de Vinsauf.

TABLE VIII. MSS.: XV CENT. ENGLISH.

1. XV c. (beg.). B.M., Cotton Vit. C. xiv, ff. 124 foll. English. Ornamental style. 2. XV c. (early, Hen. V at latest). B.M., Royal 12 E. xxii. English. The 1 is exceptional. 3. c. 1410-1415. B.M., Add. 33784, ff. 4-7. English. 4. XV c. (early). B.M., Add. 24194. Chapter numberings and index. English. 5. XV c. (early). B.M., Harl. 5369, f. 270 b. 6. XV c. (1st half). B.M., Add. 17723. English. 7. XV c. (1st half). B.M.,

174 EARLY USE OF ARABIC NUMERALS IN EUROPE

Harl. 1288, ff. 34-59. English. 8. 1418-1431. B.M., Eg. 889, f. 52 b. English. 9. XV c. (prob. 1st half). B.M., Sloane 513, f. 58. English. 10. 1431. B.M., Harl. 937. Kalendar. English. 11. After 1431. B.M., Harl. 5396, ff. 207 b foll. English. 12, 13. 1429-1446. B.M., Add. 7096, ff. 71 ff. (Curteys, *Bury St. Edmunds Register*) and Add. 14848 (do., index). English. 14. c. 1445. B.M., Harl. 3742, f. 227 b (Apologetica defensio astronomice veritatis, by Peter Card. Cambrai), ff. 238 b, 239 (John of Norfolk in artem progressionis). English. 15. 1445. B.M., Add. 11814, at end. English. 16, 17. 1449, 1454. B.M., Royal 10 B. VII. Cautions. English. 18. c. 1456. B.M., Sloane 4029, ff. 1-183 b. English. 19. XV c. (mid.). B.M., Sloane 1616, ff. 125 b, 129 b, and chapter numberings. Probably English. 20. XV c. (mid.). B.M., Royal 6 E. III. Pagination. English. Cp. Sloane 1616. 21. XV c. (mid.). B.M., Arund. 384, ff. 95 foll. English. 22. XV c. (mid.). B.M., Cotton Jul. D. VII, f. 45 b. English.

TABLE IX. MSS.: XV CENT. ENGLISH, ETC.

1. XV c. B.M., Add. 24059, f. 22 b. Algorism. English. 2. XV c. B.M., Royal 12 E. I, f. 8 b. Algorism, doubtless English. 3. XV c. (c. 1450-60). B.M., Sloane 213, f. 124. English accounts-table. 4. XV c. B.M., Royal 10 B. IX, ff. 61 b, 67, 68, 122, 122 b. Paragraph numbering and dates (1451-1459). English. 5. c. 1460. B.M., Royal 8 D. I, f. 216. English. 6. 1467. B.M., Royal 6 D. II. English. Cp. Casley, *Catalogue*, pl. xvi. 7. 1482-1485. B.M., Royal 12 G. I. Astronomical tables by Lewis Caerleon. English. 8. 1482 (?). Univ. of Edinburgh. Scotch (?) Kalendar, calculated for 1482. J. Leslie, *Philosophy of Arithmetic*, p. 115. 9. 1483, 1485, 1488. B.M., Royal 7 E. v. Cautions, English. 10. 1488. B.M., Royal 14 C. VII, fly-leaf. Cp. Casley, pl. xvi. English cursive. 11. Betw. 1427 and 1460. Paris, anc. fonds latin, no. 7295, f. 86 b. Astronomical MS. (provenance not stated). N. de Wailly, ii, pl. vii d. 12. XV c. (1st half (?)). Kalendar. From T. Wright, *Essays*, ii, p. 71, no. 3. The reference "B.M. Sloane 2927" there given is wrong, and I have not been able to find the MS. 13. 1454. "Ex cod. S. Germani, no. 531." Mabillon, *de Re Dipl.* t. xv, p. 373 (ed. 1681). 14. 1460. "Ex cod. S. Germani, de imit. Chr. Magistri Iohannis Gerson." Mabillon, *ibid.*

TABLE X. MSS. ETC.: XV CENT. GERMAN.

1. c. 1422. B.M., Add. 15107, f. 207 b, &c. Written at Lauben, near Görlitz in Saxony, in 1422. 2. c. 1420. B.M., Add. 15107, f. 215. Written at Lauben, near Görlitz in Saxony, about 1420. 3, 4. Betw. 1426 and 1430. B.M., Add. 15108, ff. 4 b, 90. German (Erfurt). 5. 1430. Libri, *Catalogue of the collection of manuscripts* (Sotheby's, 1859), No. 936. German, 26 June, 1430. 6. c. 1442. Plimpton Coll. Sacrobosco. German, copied by Hainricus Muglinch. The numerals are from a coloured illustration, representing Algorismus teaching a pupil the numerals from a sort of hornbook. D. E. Smith, *Rara Arithm.* p. 450 and pl. viii. 7. XV c. B.M., Add. 15107, ff. 36, 36 b. German. 8. XV c. B.M., Harl. 3843, f. 119. Sacrobosco. German. 9. XV c. B.M., Harl. 3843, ff. 25 a, 39 b, 40, 53 b, 99 b. Probably about 1458 (which date occurs frequently). The fork to the right-hand leg of the four is unusual. German. 10. 1468. B.M., Arund. 148. German (Erfurt). Postille Nicolai de Lyra, ff. 106 b, 192, 236 b, 283 b, 391 b. On fol. 192, 1458 is perhaps a blunder for 1468, as all the MS. seems to be contemporary. 11. c. 1463-1473. B.M., Add. 19909, f. 236 b. German. 12. 1473. B.M., Add. 19909, f. 250 b. German. Herolt, *Promptuarium*. 13. 1480. Admonter Hüttenbuch. German. *M.C.C., N.F.* xx, p. 236. 14. XV c. Heidelberg (l'al. Germ. 342). German. From Wattenbach⁴, p. 102, no. 8. Cp. Prou, *Manuel*, p. 156. Contemporary pagination. 15. 1493. Drawing by Albert Dürer, Albertina. Child Jesus holding globe. Lippmann, 450. 16. 1494. Drawing by Albert Dürer, Albertina. Bacchanal rout.

Lippmann, 454. **17.** 1494. Drawing by Albert Dürer, Albertina. Battle between Tritons (after Mantegna). Lippmann, 455. **18.** 1495. Drawing by Albert Dürer, Albertina. Venetian lady. Lippmann, 459. **19.** 1497. B.M., Royal 6 A. viii, f. 121. Cp. Casley, pl. xvi. German. **20.** 1498. Drawing by Albert Dürer, Albertina. Armed horseman. Lippmann, 461. **21.** 1500. Drawing by Albert Dürer, Albertina. Nürnberg lady in ball dress. Lippmann, 464.

TABLE XI. MSS.: XV CENT. ITALIAN.

1. c. 1400-1416. B.M., Royal 12 D. vii. Italy or S. France (script looks Italian, initials and borders rather French). **2.** 1427. B.M., Harl. 3161, f. 143 b. Bologna: Lactantius. **3.** c. 1400-35. Plimpton Coll. Italian Arithmetic. D. E. Smith, *Rara Arithm.* p. 440. **4.** 1440. B.M., Add. 14095, date at end. Italian. **5.** 1444. B.M., Add. 18041, ff. 204 b, 205. Italian, begun at Perugia, finished at Pavia in 1444. **6.** c. 1430. Plimpton Coll. Italian Arithmetic. D. E. Smith, *Rara Arithm.* p. 448. **7.** c. 1456. Plimpton Coll. Italian Arithmetic. D. E. Smith, *Rara Arithm.* p. 460. **8.** XV c. B.M., Add. 8784, ff. 50 b., 51. Italian. **9.** XV c. B.M., Eg. 853. Italian. **10.** XV c. (first half). B.M., Add. 10363. Italian. Treatise on Arithmetic. On ff. 223-229 are tables from 1418-1444. May have been written as early as 1418. **11.** 1473. Left-handed. Drawing by Leonardo da Vinci (landscape). Uffizi. **12.** 1478. Left-handed. Drawing by Leonardo da Vinci (Heads). Uffizi. **13.** c. 1475. Plimpton Coll. Italian, Arithmetic by Luca da Firenze. D. E. Smith, *Rara Arithm.* pp. 469, 471. **14.** c. 1476. B.M., Add. 22317. Italian Kalendar, ff. 90 b foll. In this MS. the S-shaped form of five occurs exceptionally (e.g. f. 98, f. 103). **15.** 1478. B.M., Add. 18041. Letter (Italian) from Pavia, inserted at f. 39. **16.** 1480. B.M., Add. 35310, f. 366. Italian Breviary, written at Piacenza. **17.** c. 1490. Plimpton Coll. Italian treatise on elementary mathematics. D. E. Smith, *Rara Arithm.* p. 476.

TABLE XII. MSS.: XVI CENT.

1. 1503. Owner's inscriptions in copies of the Confessionale of S. Antonino of Florence (of 1499) and Lochmaier's Parochiale (of 1493), in the Wolgaster Bibliothek, Greifswald (no. 456). In the second case the date is written 1053. Tracings communicated by Prof. Pernice. **2.** 1504. Drawing by Albert Dürer, formerly in the Lanna Collection. Adam and Eve. From the Dürer Society's Reproduction. **3.** 1505-1510. Various dates in vol. ii of the Works of Johann Butzbach (Bonn MS. 356). Fol. 1, incipit feliciter 1560 (for 1506); 48^b, a^o dñi 1560; 138^{B4}, 1505; 144^{Ab}, 150 x (= 1510). Drawings communicated by Dr. H. Willers. See Böcking, *Opera Hutteni*, Supp. vol. ii, p. 438. **4.** 1508. B.M., Royal 2 B. xiii. Note on fly-leaf. English. Casley, pl. xvi. **5.** 1510. B.M., Royal 7 E. v. Caution. English. **6.** 1513. Drawing by A. Dürer, Vienna Hofmuseum, Ambraser Sammlung (Siren as candle-bracket). *M. C. C.* viii, p. 127. **7.** 1514. Drawing of a crozier (German). See *M. C. C.* iii, p. 190 and pl. vi. **8.** c. 1515. Drawings attributed to Andreas Coner (Roman architectural sketchbook) in the Soane Museum. *Papers of the British School at Rome*, vol. ii (ed. T. Ashby). The hand is Italian. **9.** 1517. Drawing by Wolf Huber in the Guildhall Library, London. From the Vasari Society's Reproduction, part III, 28. **10.** 1523. Codex des Znaymer Stadtrechtes. Illuminated. *M. C. C.* xv, p. 92 and pl. i. **11.** c. 1524. Quodlibetarius, MS. Erlangen, no. 1463. From Friedlein, *Gerbert*, &c., pl. vi. **12.** 1545. Plimpton Coll. Italian, written by "Ludovicho Alt de Salispurga". Business arithmetic. D. E. Smith, *Rara Arithm.* p. 485. The numerals are rather Italian than German. **13.** c. 1560. Plimpton Coll. Italian commercial arithmetic (Florentine). D. E. Smith, *Rara Arithm.* p. 489. With the recumbent 8 compare the forms in a MS. of 1684 (*ib.* p. 441), or in the date 1628 as signed by the Dutch painter Pieter de Grebber on a picture at Stockholm (no. 448).

TABLE XIII. MSS. : GREEK.

1. XIV c. Neophytus. From Friedlein, *Gerbert, &c.*, pl. vi. 9. See P. Tannery, *Le scholie du moine Néophytos sur les chiffres Hindous. Rev. Arch.* iii. sér. 5 (1885), pp. 99–102, where this note on the ἀριθμοὶ Ἰνδικοί or περσικοί is described from two Greek MSS. at Paris, 1928, f. 15 (XV cent.), and 2350, last folio (XVI cent.). 2. XIV c. Maximus Planudes. Friedlein, *Gerbert, &c.*, pl. vi. 10, from an excerpt. On the MSS. of the ψηφοφορία see C. I. Gerhardt, *Das Rechenbuch des M. P.* (Halle, 1865); cp. Tannery in *Rev. Arch.* 1886 (i), pp. 357 ff. 3. XIV c. Cod. Marc. 534 (formerly 303). Maximus Planudes, ψηφοφορία. Villosion, *Anecd. Gr.* ii, p. 153 and plate at p. 267. This and the next MS. were kindly examined for me by Mr. W. Miller. They come from Cardinal Bessarion's library. 4. XV c. Cod. Marc. 639 (formerly 323). Maximus Planudes, ψηφοφορία. From Villosion, *Anecd. Gr.* ii, p. 153 and plate at p. 267. Must be earlier than c. 1470, since it was in Cardinal Bessarion's library. 5. Planudes, according to Tannery, *Rev. Arch.* 1886 (i), p. 359. 6. XV c. Cod. Marc., fondo Nani, 255, fol. 182 b. Scholium (in same hand as text) on Tetrabiblos of George Pachymeres. *Rev. Arch.* 1886 (i), p. 357. 7. XV cent. Paris, fonds grec 2428. Tannery, *Rev. Arch.* 1886 (i), p. 359. 8. XV c. Paris, supp. grec 387. Copied from a XIV c. MS. ? *Rev. Arch.* 1886 (i), p. 359. The forms are purely Western, but for the inverted 7.

TABLE XIV. BRITISH MONUMENTAL, ETC.

1. Series of numbers from Resurrection images on West front of Wells. *Somersetshire Archaeol. and Nat. Hist. Soc. Proc.* xxxiv (1888), p. 62; *Proc. Soc. Ant.* 1906, xxi, p. 201. Mr. Lethaby has shown that the 2 is of the 7 shape; the numerals cannot therefore be later than the early XIV cent. The only difficulty is caused by the second form of 5. This is hardly possible in the XIII–XIV century. It may be a misread 3 or 6, and should be re-examined. 2. 1445. Tower of Heathfield Church, Sussex. *Journ. Brit. Arch. Assoc.* ix, p. 433; Wright, *Essays*, ii, p. 76. Is this contemporary? The form of 5 seems very modern for the date. 3. 1448. On wooden lych-gate, Bray Church, Berks. *Arch. Journ.* 1850, p. 75. 4. 1470. Elgin Cathedral. Tomb of first Earl of Huntly in St. Mary's aisle. Rubbing in Library of Soc. of Antiquaries. Communicated by Mr. J. Cooper Clark, of Ladyhill. Both 5 and 7 look foreign. 5. 1487. Belfry door of Piddletrenthide, Dorset. Wright, *Essays*, ii, p. 85. 6. 1487. Wooden door at Arminghall. Wright, *Essays*, ii, p. 77. 7. 149? Beverley, on pavement near S. side of Earl of Northumberland's Monument. Gough, *Sep. Mon.* ii, 2, p. 309. The last figure is broken away. 8. 1490. Colchester. The lower part of the 4 being defaced, this has been read as 1090. Wright, *Essays*, ii, p. 78. 9. 1493. Stone in wall of cottage in remains of episcopal manor-house at Bishop's Waltham, Hants. *Arch. Journ.* 1850, p. 76. 10. 1494. Tower of Hadley Church, Middlesex. Wright, *Essays*, ii, p. 79. 11. 1498. On a shield in the hall of Milton Abbey. Wright, *Essays*, ii, p. 86. 12. 1503. St. Cross. On stone. This occurs twice, once in the Porter's Lodge, once in the "Nun's Room". *Arch. Journ.* 1850, p. 76; *Journ. Brit. Arch. Assoc.* ix, pl. xxxiv. 13. 1504. Arms of James IV of Scotland. On a buttress projecting from the W. side of the crowned tower of King's College, Old Aberdeen. *Proc. Soc. Ant. Scot.* xxiii, pl. i (p. 80). Communicated by Mr. W. Kelly. 14. 1509. Stone from London Bridge, found in 1758. Wright, *Essays*, ii, p. 80. 15. 1514. Milton Abbey Church. Wright, *Essays*, ii, p. 86. 16. 1524. On tabernacle at Kinkell Church near Inverurie. АЮ. ДИ. 1524. МЕОРАРЕ А. Г. The initials are those of Alexander Galloway, "Official" of Aberdeen and Rector of Kinkell. *Trans. Aberdeen Ecclesiol. Society* 1889 (1890). From a photograph communicated by Mr. W. Kelly. There is or was another stone dated 1525 in the same place. 17. 1525. On the screen of Winchester Cathedral. *Journ. Brit. Arch. Assoc.* ix, p. 434. 18. 1527. Stoke Charity, Hants; Waller tomb. *Ib.* p. 435. 19. 1531. Stone from E. battlements of vestry of church at Enfield. Gough, ii (1),

EARLY USE OF ARABIC NUMERALS IN EUROPE 177

p. 140, pl. xlix*. 20. 1534. Beam in roof of Eccleston Church, Lancs. Communicated by Mr. C. R. Peers. The assimilation of numerals to letters is very marked. 21. 1537. Wooden seat in Aldham Church, Suffolk. T. Wright, *Essays*, ii, p. 81.

TABLE XV. BRITISH MONUMENTAL, ETC. (*continued*).

1. 1545. Scratched on stone in choir, Winchester. *Journ. Brit. Arch. Assoc.* ix, p. 435.
2. 1552. From the Half-Moon Inn, near Magdalene College, Cambridge. T. Wright, *Essays*, p. 82, after Gough.
3. 1577. Date 1573 on tomb of Robert Blounte, Astley, Worcs., made in 1577 by John Gildon of Hereford.
4. 1587. Slab of a member of the Walweyn family, in floor of S. aisle of Colwall Church, Herefordshire.
5. 1592. Ashford Church. T. Wright, *Essays*, ii, p. 82, after Gough.

TABLE XVI. BRITISH BRASSES.

1. 1447. Thomas Fortey, Northleach, Glo'ster. From rubbing in the Soc. Ant. Library.
2. 1454. Eleanor Coke, wife of William Bramble and Richard Warbulton, Ware, Herts. From rubbings in the Soc. Ant. Library and by Mr. C. R. Peers.
3. 1472. Ingylton, Thornton, Bucks. From a rubbing in the Soc. Ant. Library. Cp. T. Wright, *Essays*, ii, p. 77.
4. 1481. Wm. Yelverton, Rougham, Norfolk. From J. S. Cotman.
5. 1487. Sir Wm. Pecche, Lullingstone, Kent. From rubbing in the Soc. Ant. Library. Cp. Belcher, i, pl. lxxv, no. 145.
6. 1489. Thos. Gilbert, Allhallows, Barking. From rubbing in the Soc. Ant. Library. Cp. T. Wright, *Essays*, ii, p. 78.
7. 1493. Houghton Conquest, Beds. From rubbing in the Soc. Ant. Library.
8. 1510. John and Roger Yelverton, Rougham, Norfolk. From Cotman.
9. 1510. Wm. Bysse, Fellow of Merton. Merton College Ante-chapel, Oxford. From a rubbing.
10. 1538. Thomas Bullen, Hever. Rubbing by Mr. C. R. Peers.

TABLE XVII. BRITISH BELLS.

1. 1516. Isleham, Cambs. From a rubbing by Mr. H. B. Walters.
2. 1523. Leaden Roothing, Essex.
3. 1540. Stanstead Mountfitchet, Essex. 6th bell, now recast. From a rubbing belonging to Mr. H. B. Walters.
4. 1546. Felstead, Essex. Clock bell. From a rubbing belonging to Mr. H. B. Walters.
5. 1587. Turton Tower bell. From *Old South-East Lancashire*, vol. i (1880), p. 122.

TABLE XVIII. GERMAN MONUMENTAL, ETC.¹

1. 1388. Ulm. Tombstone of Cunrat Riter. *Verhandl. des Vereins f. Kunst u. Alterthum in Ulm u. Oberschwaben*, vi (1874), pp. xiv f.; *Anzeiger*, 1876, 35; Wattenbach, *Lat. Pal.*⁴, p. 101. The stone was found some feet deep in a cemetery which had not been used since 1530.
2. 1406. Salteins, Vorarlberg. Inscription on tabernacle. *M.C.C., N.F.* xxii, p. 31. The date is written +146†.
3. 1414. Pettau. Inscription on a bracket. *M.C.C., N.F.* vi, pp. cxii, cxiv.
4. 1439. Nürnberg. Lorenzkirche. *Anzeiger*, 1861, 49.
5. 1441. Freising. Choir-stalls from Stiftskirche of St. Veit. *M.C.C.* viii, p. 250. An excellent instance of the sort of date that can be read 1001.
6. 1446. Pettau. Stall. *M.C.C., N.F.* vi, p. cxliv.
7. 1451. Wiener Neustadt. Gravestone of Anna Roll, wife of Johann Roll, who was Bürgermeister of Neustadt 1467-1471. Ströhl, *Herald. Atlas*, text to pl. lxvi, fig. 4. The date of Roll's tenure of office does not of course prove that the date is 1471 rather than 1451.
8. Würzburg, Dom. Coat of arms of Jörg von Bebenburg. Salver, *Proben des hohen Deutschen Reichs-Adels*, Taf. XVII. 65.
9. 1454. Grätz. Tombstone in Franciscan monastery. *M.C.C., N.F.* xvi, p. 75.
10. 1454. Nördlingen. Over porch of tower of Georgenkirche. *Anzei-*

¹ See also Table XLIX.

ger, 1861, 153. The reading 1474 has been suggested; but this form of 7 is not likely at so early a date (see nos. 15-22 in this Table, and 1, 2, 13, 14 in the next). 11. 1458. Ulm. Oak singing-desk by Jörg Sürlin. *Anzeiger*, 1861, p. 49. See *Berichte des Kunst- und Alterthumsvereins von Ulm und Oberschwaben*, 1844, p. 17. 12. 1464. Villach. On choir-stall in church. *M.C.C.* xv, p. 173; cp. iii, p. 127. 13. 1465. Feldkirch. On a house in Marktgasse. *M.C.C.*, *N.F.* viii, p. lxxi. 14. 1466. Friesach. Stone built into a house. *M.C.C.*, *N.F.* xxii, p. 169. 15. 1467. Wiener Neustadt. Gravestone of Empress Eleonora in Cistercian Abbey of Neukloster. By Nicolaus Lerch of Leyden, *M.C.C.* xiv, p. 103. 16. 1470. Garsten. Tomb of Rudolf von Losenstein in the Losenstein Chapel. *M.C.C.*, *N.F.* v, p. xliii. The monument bears the dates 1449 and 1470; the latter is probably the date of its erection or of the death of Rudolf's wife Magdalena. 17. 1470. Ulm. Carved on a roof-beam on N. side of nave of the Minster. *Anzeiger*, 1861, 231. Rather 1470 than 1450, since the short stroke of the doubtful sign turns so definitely downwards. 18. 1470. Hall. Katharinenkirche. *Anzeiger*, 1861, 85, 153. This has also been read 1450, but 1470 is to be preferred for the same reason as in the preceding example. 19. 1473. Ulm. Cut in stone over door of Dürftige-Stube in the hospital. *Anzeiger*, 1861, 84. 20. 1474. Vienna. Grave-stone of Margaretha Kelbel. Ströhl, *Heraldischer Atlas*, Text zu Taf. LXVI, fig. 5. 21. 1476. Kralitz. Tomb of Vitus de Kralitz. *M.C.C.*, *N.F.* xxvii (1901), p. 117. 22. 1477. Krems (Lower Austria). Over S. doorway of Church of the Piarists. *M.C.C.* xi, p. 133.

TABLE XIX. GERMAN MONUMENTAL, ETC. (*continued*).

1. 1477. Gravestone of Eustach Frodnacher at Pulgarn. *M.C.C.*, *N.F.* v, p. cxxix. 2. 1479. Marble slab of Sigmund von Eytzing, in parish church of Waidhofen a. d. Ybbs. *M.C.C.*, *N.F.* i, p. xxxiii. 3. 1480. Tabernacle, St. Lorenz, Lorch. *M.C.C.* xiii, p. 179. 4. 1480. Brass of Archbishop Jacobus de Senno. Gnezen. From Creeny, *Monumental Brasses on the Continent*. 5. 1481. On statue of St. Leonhard in church at Kundl (Tirol). *M.C.C.*, *N.F.* xvi, p. 149 (fig. 7). 6. 1481. On tabernacle at Röthis (Vorarlberg). *M.C.C.*, *N.F.* xxii, p. 32. 7. 1482. Brass of Bishop Rudolphus, Breslau. From Creeny, *op. cit.* 8. 1482. On the so-called Fischkasten at Ulm. *Anzeiger*, 1861, 83. 9. 1484. Arms of Kilian von Bibra, in the Dom, Würzburg. From Salver, Tab. VII. 21. 10. 1484. Builder's inscr., chapel of St. Agatha on Christberg (on the pass to Dalaas in the Klosterthal). *M.C.C.*, *N.F.* v, p. 67. 11. 1486. Tombstone of Eitzinger family in parish church, Drosendorf. *M.C.C.* xvii, p. clv. 12. 1486. Brass of Ernst, Duke of Saxony, at Meissen. From Creeny, *op. cit.* 13. 1487. Inscr. on tabernacle at Damüls (Vorarlberg). *M.C.C.*, *N.F.* v, p. 68; xxii, p. 32. 14. 1487. Gravestone in Church of St. Lorenz, Lorch. *M.C.C.*, *N.F.* v, p. cxxix. 15. 1488. Brass of Cardinal Nicolas de Cusa, at Cues on the Mosel. From Creeny, *op. cit.* 16. 1488. Gravestone at Friesach. *M.C.C.*, *N.F.* viii, p. 114. 17. 1490. Choir-stalls, Spitalkirche, Stuttgart. *Anzeiger*, 1861, 231. 18. 1491. On corbel under tabernacle in church of the Benedictines at Ödenburg. *M.C.C.* viii, p. 343. 19. 1491. Builder's mark in church at Hüttenberg (Kärnten). *M.C.C.*, *N.F.* xxiii, p. 110 and plate. 20. 1492. On tomb of King Kazimierz Jagiellończyk at Krakau, by Veit Stosz. *M.C.C.* xiii, p. li. 21. 1493. Grave-stone of Anna Hoffer at Schwatz. *M.C.C.*, *N.F.* xxiii, p. 40. 22. 1493. Gravestone of Johann Lenberg in church at Reichersberg in the Innviertel. *M.C.C.*, *N.F.* v, p. xcvi. 23. 1495. On tabernacle at Egg (Vorarlberg). *M.C.C.*, *N.F.* xxii, p. 33. The doubtful figure has been read as 7, but I think there can be no doubt that it is a 5.

TABLE XX. GERMAN MONUMENTAL, ETC. (*continued*).

1. 1495. Marble tombstone of Jeronimus Schrenck, at Loiben. *M.C.C.*, *N.F.* xvii (1891), p. 61, and Beilage v, fig. 2. 2. 1496. On stone panel from the castle at Grätz. *M.C.C.*,

- N.F.* xx, p. 51. 3. 1497. On wooden aumbry niche at Biecz. *M.C.C., N.F.* xix, p. 229.
 4. 1497. Landeck on the Inn: under shield of Oswold von Schrofenstein on S. wall of church. *M.C.C., N.F.* xvi, p. 27. 5. 1497. Landeck. Gravestone. *M.C.C., N.F.* xvi, p. 27.
 6. 1497. Landeck. Under shield of Oswold von Schrofenstein. *M.C.C., N.F.* xvi, p. 28.
 7. 1497. Stone in gable of Church of St. Ruprecht in Bezirk Strassenfuss. *M.C.C.* vii, p. 188.
 8. 1497. At Kuttenberg in Bohemia, in the tower-chamber of the old Münsterberg house. *M.C.C.* vi, 318. The 7 seems to be clear. 9. 1497, written m·cccc·97. Tomb of Wolfgang Hellcampf at Efferding in Hansruckviertel. *M.C.C., N.F.* vi, p. xlvi. The doubtful figure might possibly be meant for a 5. 10. 1497. Dates on the tombstone of Jörg von Teuffenbach (died 1497) and his family at Teuffenbach in Steiermark. *M.C.C., N.F.* xvii, p. 226, and Beilage xv, fig. 3. 11. 1498. Brass of Bishop Uriel, Posen. From Creeny, *op. cit.*
 12. 1499. St. Jacob's, Villach. The dates 1487 and 149? occur on the gravestone of Wolfgang and Jeronima Leininger; the former died in 1499, the latter in 1487. *M.C.C.* xix, p. 144.
 13. 1499. Grätz, Hausmark on outside of Dom. *M.C.C.* xix, p. 122. 14. 1499. Gravestone at Ungarisch-Hradisch. *M.C.C., N.F.* xxiii, p. 102. 15. 1499. Tabernacle in Leechkirche, Grätz. *M.C.C.* iv, p. 219. 16. 1499. Tombstone of Eitzinger family at Drosendorf (not earlier than 1501). *M.C.C.* xvii, p. clvi. 17. 1499, written m499. Signature of Veit Stosz on relief of Kiss of Judas in Church of St. Sebaldus, Nürnberg (on the scabbard of one of the Orientals). *Anzeiger*, 1862, 403. This is rightly explained as a date by Lepkowski, *M.C.C.* xii, p. lxxxv. 18. 1500. Arms of Georg Fuchs von Wunfurt. Dom, Würzburg. Salver, Tab. III, 8. 19. 1500. Arms of Barth. von Reie. Dom, Würzburg. Salver, Tab. V. 14. 20. 1501. Arms of Georg von Giech. Dom, Würzburg. Salver, p. 146, 2. 21. 1502. Gmünd, Spitalkirche. *Anzeiger*, 1861, 231. 22. 1502. Arms of Albrecht von Bibra. Dom, Würzburg. Salver, Tab. V. 15. 23. 1503. Cilli (Styria). Gravestone of a Hohenwarter. *M.C.C., N.F.* vii, p. lxxv.

TABLE XXI. GERMAN MONUMENTAL, ETC. (*continued*).

1. 1504. Partschendorf. Tombstone on outer wall of church. *M.C.C., N.F.* xxv, p. 43.
 2. 1505. Taufers. Tombstone of Anna Wiltpolt. *M.C.C., N.F.* xxi, 256. 3. 1505. Sebenstein. Gravestone. *M.C.C., N.F.* xi, p. xlii. 4. 1505. Brass of Eberard von Rabenstein, Bamberg. From Creeny, *op. cit.* 5. 1506. Font in church on the Heerberg. *Anzeiger*, 1861, 232. 6. 1506. Rankweil, on crossbeam of bell-frame in the "Dicker Thurm". *M.C.C., N.F.* xxi, p. 241. 7. 1506. Landeck. Porch of church. *M.C.C., N.F.* xvi, p. 24. 8. 1506. Landeck. Stone font. *M.C.C., N.F.* xvi, p. 25. 9. 1506. Gmünd. In side chapel of parish church. *Anzeiger*, 1861, p. 232. 10. 1506. Tombstone of Heinrich and Anna von Guttenberg at Wolfsberg (Kärnten). *M.C.C., N.F.* xviii, p. 111. 11. 1507. Salzburg. Gravestone. *M.C.C., N.F.* xi, p. lxviii. 12. 1507. Nassenreith, near Imst, Tirol. Stone font. *M.C.C., N.F.* xviii, p. 65. 13. 1508. Klosterneuburg. Gravestone. *M.C.C., N.F.* xiv, p. 51. 14. 1509. Laterns, Vorarlberg. Inscription on tabernacle. *M.C.C., N.F.* xxii, p. 32. 15. 1510. Wooden Todtenschild, from Salzburg, of "Georg Stöckl von Schwarzcek". *M.C.C., N.F.* xxv, p. 107. 16. 1510. Kufstein, Tirol. Tombstone of Kaspar v. Thurn. Ströhl, *Herald. Atlas*, Text zu Taf. LXVII, fig. 5. 17. 1511. Sebenstein. Gravestone. *M.C.C., N.F.* xiii, p. xlvii. 18. 1513. Gurkfeld. Tablet in Church of St. John. *M.C.C., N.F.* xviii, p. 124. 19. 1513. Langenzenn. Relief of Annunciation by Veit Stosz. *Mitt. Germ. Nationalmus.* 1908, Taf. IX. 20. 1513. Steier (Upper Austria). Tombstone of Meister Wolfgang Tenk. *M.C.C.* xvii, p. li; *N.F.* xvi, p. 153. 21. 1516. Cilli, parish church. Tomb of Jakob Neuburger's two wives. *M.C.C., N.F.* xvi, p. 254, and Beilage xx, fig. 3. 22. 1520. Schönberg near Vöklabruck. Monument of Caspar von Perkheim in the Marienkirche. *M.C.C.* xv, p. cxvii. 23 (and XXII. 18, 23, 24). 1520, 1536, 1543, 1544. Luggau (Kärnten). Hauszeichen-dates on church. *M.C.C., N.F.* xxvi (1900), p. 19 and plate.

TABLE XXII. GERMAN MONUMENTAL, ETC. (*continued*).

1. 1521. Maria Feicht (Kärnten). Shield on vaulting of organ-gallery. *M.C.C.*, xiii, p. 77.
 2. 1521. Tarnów. Marble inscription on monument (in Italian style) of Barbara Tarnowska. *M.C.C.*, *N.F.*, xix, p. 73. 3. 1522 (?). Ringenhain (Friedland). Builder's inscription in St. Magdalen's. *M.C.C.*, *N.F.* xxii, p. 154. 4. 1523. Nürnberg, Germ. Nationalmus. Bronze epitaph of Mertin Stengel. *Mitt. Germ. Nationalmus.* i, p. 185. Cp. the forms on the "1320" seal of Trostberg (above, p. 144). 5. 1524. Römheld, Old Henneberg Schloss. Keystone of a small pointed-arched door. *Anzeiger*, 1863, 324. 6. 1524. Friesach. Tombstone of Coloman Brunmeister. "M.D.24. die 21", &c. *M.C.C.*, *N.F.* vi, p. cx. 7. 1524. Feldkirchen. On a house. (Painted or carved?) *M.C.C.*, *N.F.* xxii, p. 170. 8. 1524. Olmütz. Builder's inscription in St. Michael's. *M.C.C.*, *N.F.* xix, p. 131. 9. 1524. Latsch (Vintschgau). Builder's date in church. *M.C.C.*, *N.F.* xxiii, p. 213. 10. 1524. Maria Feicht (Kärnten). Stone music-gallery in church. *M.C.C.*, *N.F.* xxiv, p. 107. 11. 1524. Prusinovic (Mähren). Grave-stone. *M.C.C.*, *N.F.* xix, p. 34. 12. 1526. Brensbach Evangel. Church. Date under the arms of Philip the Magnanimous on the pulpit. *Archiv f. hess. Gesch.* v, pt. 2, art. xii. Important in its bearing on the forms seen on the seal of Gottfried von Hohenlohe (p. 144). 13. 1528. Salzburg. Tombstone of Hans Reuter von Klebing. [Reference mislaid.] 14. 1529. Enns im Traunviertel, Austria. Gravestone of Erasmus Paumkirchner. *M.C.C.*, *N.F.* vii, p. cviii. 15. 1533. Wolfsberg. Tombstone of G. von Streitberg. *M.C.C.*, *N.F.* xviii, p. 150. Note the two forms of 3, one of which might almost be taken for a 2. The 1 is somewhat confused with the preceding ornamental stop. 16. 1534. Clay water-pipe from Bochtitz. *M.C.C.*, *N.F.* xxi, p. 50. 17. 1534. Weikelsdorf near Zeitz. On a pillar of the church (beginning of XVI cent.). *Anzeiger*, 1863, 322. The interpretation is not quite sure, the inscription being a freak. There is a still worse instance in the church at Langendorf, near Zeitz (*ib.* p. 323), which has been read 1531 or 1571, although it is difficult to make anything at all out of it. 18. See XXI. 23. 19. 1537. Regensburg. Sandstone slab outside Church of St. Emmeran. L. Day, *Lettering in Ornament*, after Gerlach u. Schenk, *Monum. Schriften*. 20. 1541. Nürnberg. Bronze epitaph. L. Day, *Lettering in Ornament*, p. 54, after Gerlach u. Schenk, *Bronce-epitaphien der Friedhöfe zu Nürnberg*. 21. 1542. Brunn. Tombstone (in Dom) of Michael of Regensburg and his wife, bearing dates 1519 and 1542, all probably of the latter date. *M.C.C.*, *N.F.* xix, p. 133. 22. 1542. Raigern. Gravestone of Abbot Ambrosius. *M.C.C.*, *N.F.* xxi, p. 123, where the date is described as 1542 corrected to 1540; from the illustration it would appear that the last sign is merely a 2 with ornamental serifs. 23, 24. See XXI. 23.

TABLE XXIII. GERMAN SEALS.

1. 1331. City of Heidingsfeld am Main. *Anzeiger*, 1859, 249. In the illustration there given it may be noted that the numerals are somewhat weak in appearance, and not symmetrically placed with regard to the design; are they a subsequent addition? 2. 1351 (pl. XIX, no. 5). City of Ulm. Germ. Mus., Nürnberg. "Sigillum secretum civium in ulma 1351." *Anzeiger*, 1859, p. 250; *Verhandl. des Vereins für Kunst u. Alterthum in Ulm u. Oberschwaben*, vi (1874), pp. xiv f. 3. 1368. Johann I, Landgraf zu Leuchtenberg. *Anzeiger*, 1859, 373. Impressions in the K. bayer. Reichsarchiv. 4. 1369. Hermann der Rot von Ulm. *Anzeiger*, 1861, 153; 1869, 326 (illustrated). It is noted that the form of the shield is unusual at this time. 5. 1405 (pl. XIX, no. 4). This is apparently the date on an obscure seal of the city of Wimpfen in the Germ. Mus., Nürnberg. The legend appears to be "S. Secreti (*sic*) Oppidi Wimpfensis 1405". The 5 is like a modern 2 set on its side. This may be the seal which is described in *Anzeiger*, 1859, p. 250, as reading 1426. 6. 1412 (pl. XIX, no. 6). Johann, Abbot of Kaisersheim. Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 251. "Sigillum iohannis

abbatis in cesarea h(?)." The date 1412 is in the field. This is Johann Scherb, eighteenth abbot, 1405-1423. 7. 1425. Propst Ulrich in den Wengen. *Anzeiger*, 1861, p. 82. 8. 1429 (pl. XIX, no. 3). Bishop Albrecht II of Eichstädt. Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 251. 9. 1433 (pl. XIX, no. 7.) Monastery of St. Oswald. Germ. Mus., Nürnberg. "1433. s. conventus monasterij s. oswaldi canonicorum regular." In *Anzeiger*, 1859, p. 251, this is described as a seal of the Monastery of Niederaltaich. St. Oswald's, however, was an Augustinian house, near Gravenau in the diocese of Passau, though it seems to have been in some way dependent on the Benedictine house at Niederaltaich. On this seal the arms of the house are simply [az.] a fess [arg.]; above the shield is a raven holding a ring in its beak. Sibmacher, *Klöster*, p. 67, Taf. 83, gives a later version of the arms showing two shields accolés, viz. az. a fess arg., and arg. on a mount a raven holding a ring in its beak (tincture not stated). 10. 1433. City of Stuttgart. "S. civium in Stuetgarten." *Anzeiger*, 1861, p. 84. See Pfaff in *Württemb. Jahrbücher*, 1854, 2, p. 178. 11. 1436. City of Heidelberg. In use on documents from 1436 to 1501. See A. von Weech, *Siegel der badischen Städte*, pl. xviii. 12. 1440. City of Grätz. *M.C.C.* xvi, p. cxl. Cp. J. Wartinger, *Privilegien der Hauptstadt Graz* (1836), p. ii. 13. 1444. Seal of a member of the family of Riedtheim. Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 250. The name is there given as Ludwig von Rietheim, which I cannot decipher on the impression before me. Possibly the name is Ulric (Udalric), since an Udalric of Riedtheim was in existence at this time (Bucelinus, *Germania Stemm.* vol. i, under Riedtheim). 14. 1444. Seal of Monastery of Holy Trinity, Wiener Neustadt. *Jahrb. k. k. Centr.-Comm. für Erforsch. u. Erhalt. der Baudenkmale*, iii (1859), p. 238. 15. 1(44)4. Seal of city of Wetzlar, Germ. Mus., Nürnberg. "Secretū civitatis wetzlariēsis ad causas 1[44]4." *Anzeiger*, 1859, p. 250. 16. 1446. Seal reading "Nicolaus Grünwalt pp. ad(?) Sot(?)". Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 251 ("Kloster Grünwald"). 17. 1446. Albert VI of Austria. *M.C.C.* xv, p. 37. 18. 1450. Seal of Imperial Landgericht (provincialis burggraviatus) in Nürnberg. Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 251. This is given (wrongly) as 1420 in *Anzeiger*, 1861, p. 230. 19. 1450+. Friedrich III. No space allowed for the fourth numeral. Cp. the book-plate of 1470 of Johannes, priest of St. Moritz in Augsburg (above, p. 150). 20. 1452. Seal of the Provincial of the Franciscan Order for Austria and Styria. *M.C.C.* xix, p. 260. 21. 1453. City of Krems. Melly, no. 46, pl. viii; *M.C.C.* xvii, p. xxiii.

TABLE XXIV. GERMAN SEALS (*continued*).

1. 1453. Dominican Convent of St. Peter in Wiener Neustadt. *M.C.C.* xv, p. cxxviii. 2. 1454. City of Ulm. B.M., Birch, *Catal. of Seals*, no. 21,521 (misread 1457); on a document of 1520 (B.M., Add. Ch. 26725). 3. 1454. Seal of Heinrich Mühlbach of Judenburg. *M.C.C.*, *N.F.* xxii, p. 26, fig. 18. 4. 1454. Kurfürst Friedrich I von der Pfalz. Germ. Mus., Nürnberg. *Anzeiger*, 1859, p. 250. 5. 1458. Friedrich III. *M.C.C.* xvi, p. 31. 6. 1458. Wiener Neustadt. *M.C.C.* xvi, p. cxcv. 7. 1459. Friedrich III as Archduke of Austria. From a wax cast of an impression in the Germ. Mus., Nürnberg. Cp. the illustration in *M.C.C.* xvi, p. 23, where the 5 is drawn somewhat differently. 8. 1464. Friedrich III. *M.C.C.* xvi, p. 31. 9. 1464. City of Vienna. *M.C.C.* xi, p. xi (Beibl. no. 16). 10. 1464. City of Oppenau, in use 1474-1609. A. von Weech, *Siegel der badischen Städte*, pl. lxxxv. A later version of this seal was evidently made towards the end of the century; it bears the same date (but with the upright 4), and occurs on documents from 1499 to 1622. 11. 1465. City of Cilli. *M.C.C.* xvi, p. cii. 12. 1467. Knittelfeld. *M.C.C.*, *N.F.* iv, p. lxx. 13. 1468. Markt Aspang. *M.C.C.* xvi, p. lxii. 14. 1469. Grein. *M.C.C.* xix, p. 89. On a document of 1473. Cp. Melly, p. 71, no. 149, pl. iv. 15. 1471. Gottschee. *M.C.C.*, *N.F.* xii, p. clix. 16. 1472. Landgericht of the Grafschaft Rotenfels. *Anzeiger*, 1861, p. 83.

182 EARLY USE OF ARABIC NUMERALS IN EUROPE

The original matrix is in the Maximiliansmuseum at Augsburg. **17.** 1473. Krautheim. In use 1503-1521. A. von Weech, *Siegel der badischen Städte*, pl. vi. **18.** 1476. Gmünden. *M.C.C., N.F.* iv, p. lxix. **19.** 1477. Gurkfeld (Krain). *M.C.C.* v. 328. Cp. *M.C.C.* xix. 89, which is a XVI cent. reproduction.

TABLE XXV. GERMAN SEALS (*continued*).

- 1.** 1479. Augustin Adlof of Judenburg. *M.C.C., N.F.* xxii, p. 26. On a document of 1480. **2.** 1480. Amalie, Duchess of Bavaria, daughter of Friedrich the Mild. O. Posse, *Die Siegel der Wettiner*, pl. xxiii. 4. **3.** 1481. Provost of Monastery of St. Nicolas in Rotenmann. *M.C.C.* xix, p. 252. **4.** 1483. City of Freiburg i. Ü. *Anzeiger*, 1873, 94. **5.** 1485. Rector of University of Cologne. Silver matrix in the Victoria and Albert Museum. Cp. Sibmacher, *Wappenbuch*, i. 8, Taf. XVIII, 3 (illustration inexact). The bottom stroke of the 5 is shortened by part of the design. **6.** 1487. Krems. Melly, *Beiträge*, no. 48, pl. ix. Cp. *M.C.C.* xvii, p. xxiv. **7.** 1487. Dominican Convent of St. Mary, Neukloster. *M.C.C.* xix, p. 246. **8.** 1487. Monastery of St. Nicolas in Rotenmann. *M.C.C.* xix, p. 253. **9.** 1488. City of Judenburg. *M.C.C.* xvii, p. clix. On a document of 1603, but may be contemporary with the date it bears. **10.** 1488. Monastery of St. Paul in the Lavantthal. *M.C.C.* xix, p. 261. **11.** 1489. Benedictine Monastery of St. Lambrecht. *M.C.C.* xix, p. 242. **12.** 1489. Benedictine nunnery at Göss (Styria). *M.C.C.* xviii, p. 318. **13.** 1489. City of Bautzen. Germ. Mus., Nürnberg. Misread 1444 in *Anzeiger*, 1859, p. 250. It may possibly be 1484. **14.** 1492. Hans Hohewarter of Judenburg. *M.C.C., N.F.* xxii, p. 26. **15.** 1493. Seal of Hans Stahl of Judenburg. *M.C.C., N.F.* xxii, p. 26. **16.** 1493. Drosendorf. *M.C.C., N.F.* iii, p. cxxiii. **17.** 1502. Brilon (Westphalia). Philippi, *Westphal. Siegel*, pl. 97, 10. **18.** 1503. Frauenbruderschaft im Spitale zu Wien. *M.C.C.* xvi, p. lxii. **19.** 1503. Vienna. *M.C.C.* xviii, p. 219. **20.** 1503. Heidelberg. On documents from 1502 (!) to 1601. A. von Weech, *Siegel der badischen Städte*, pl. xviii. **21.** 1504. Regular Canons, S. Veit, Pöllau. *M.C.C.* xix, p. 250.

TABLE XXVI. GERMAN SEALS (*continued*).

- 1.** 1507. Stephan Bär of Judenburg. *M.C.C., N.F.* xxii, p. 26. **2.** 1514. Tübingen. Pfaff, *Württemb. Jahrbücher*, 1854, 2, p. 147. **3.** 1517. Reuchen. In use 1517-1522. A. von Weech, *Siegel der badischen Städte*, pl. lx. **4.** [15]19. Two seals of Hermann V, Abp. of Cologne. Ewald, *Rheinische Siegel*, i, pl. xxvi. 7; xxvii. 1. **5.** 1521 (or 1527). Heildelshelm. In use 1570-1579. A. von Weech, *Siegel der badischen Städte*, pl. xlvi.

TABLE XXVII. GERMAN: VARIOUS.

- 1.** 1434. "Anno doi milesimo cccc 34". Window in St. Leonhard's, Tamsweg. *M.C.C.* xix, pp. 77, 80. **2, 4.** 1444, 1448. On a stole and pallium, with the motto of Friedrich III, at Tököle. *M.C.C., N.F.* vii, pp. 72, 73. **3.** 1446. Bell at Neuberg. *M.C.C., N.F.* xxiii, p. 122. The date 1440 occurs on a bell in the church ad S. Ioannem decoll. in Zebeu (*M.C.C.* xvii, p. iii). **5.** 1463. Figures and date on a portable sundial found at Hörnstein, Lower Austria. *M.C.C.* xvi, p. clxxx. **6.** 1466 (M466). On the bottom of a paten. *Anzeiger*, 1861, p. 190. **7.** 1491. Mark on the eagle of the Merchants' Schützengild of Breslau. *M.C.C.* vii, p. 52. **8.** 1495. Pall of the Holzschuhers, in the Germanisches Nationalmuseum, Nürnberg. *Mitt. Germ. Mus.* 1895, p. 99. **9.** 1499. On sword of the Hochmeister Siebenhirter of the Order of St. George. *M.C.C.* xviii, pp. 310 (fig. 11), 315. **10.** 1508. Bell in St. Michael's Chapel, Rankweil. *M.C.C., N.F.* xxi, p. 241. **11.** 1517. Glass-painting in the Germanisches Nationalmuseum, Nürnberg. *Katalog*² (1898), no. 260, p. 33 and pl. xi. **12-14.** 1526, 1530, 1531. German pottery (plates in the Germanisches Nationalmuseum). *Anzeiger*, 1875, p. 238. **15.**

EARLY USE OF ARABIC NUMERALS IN EUROPE 183

1573. Date and figures on a metal gauge (German) in the British Museum. A late survival of the old 4. **16.** 1596. German pottery. *Anzeiger*, 1875, p. 268. Very similar forms occur on a plate dated 1593, *ibid.*

TABLE XXVIII. GERMAN PAINTINGS.¹

1. 1435. Altar-piece by Lukas Moser at Tiefenbronn. *Anzeiger*, 1861, pp. 49 and 83; *Jahrb. der kunstgesch. Gesellsch. f. fotogr. Publikationen*, v (1899). It has been read 1431 and even 1451; the latter is highly improbable. If the artist wished to vary the form of his 1, he would be more likely to ornament the numeral on its first than on its second occurrence; the first numeral is often decorated, like an initial letter. The fourth numeral here is thus probably not 1, and it can hardly be anything but 5. **2.** 1446. Heraldic painting ("Hand-registratur" of King Friedrich IV), Vienna. Ströhl, *Herald. Atlas*, pl. xxviii. **3, 4.** 1449. D. Pfenning. Vienna, 1396. **5.** 1483. Hungarian School. Budapest, 9. **6, 7.** 1487, 1488. Paintings on side-altars in St. Martin's Chapel near Ludesch. *M.C.C., N.F.* xviii, p. 236. **8.** 1491. Monogrammist R. F. Vienna, 1398. **9.** 1493. Dürer. Portrait of himself, formerly in the Felix Collection. Cust, *Dürer Engravings*, p. 21. **10.** 1498. Dürer. Portrait. Prado. **11.** 1499. Dürer. Portrait of Hans Tucher. Grand-Ducal Museum, Weimar. From Dürer Society's Reproduction. **12.** 1503. Dürer. Vienna, 1442. **13.** 1504. Lucas Cranach the Elder. Berlin, 564 A. **14.** 1506. Dürer. Berlin, 557 F. **15.** 1506. Dürer. Dresden, 1870. **16.** 1507. Dürer. Vienna, 1444. **17.** 1507. Dürer. Berlin, 557 I. **18.** 1507. Albrecht Altdorfer. Berlin, 638. The date occurs twice on the picture. **19.** 1507. Albrecht Altdorfer. Berlin, 638 A. Note the 3-like form of 5. **20.** 1508. Meister des Marienlebens. Cologne, 141. **21.** 1508. Dürer. Vienna, 1446.

TABLE XXIX. GERMAN PAINTINGS (*continued*).

1. 1509. Hans Schäuffelein. Portrait. German. Mus., Nürnberg. *Mitt. Germ. Mus.*, 1895, p. 65. **2.** 1510. H. Schäuffelein. Prag, 609. **3.** 1511. Hans Burgkmair. Berlin, 584. **4.** 1511. Hans von Kulmbach. Berlin, 596 A. **5.** 1511. H. Schäuffelein. Berlin, 560. **6.** 1511. Dürer. Vienna, 1445. **7.** 1512. Dürer. Vienna, 1447. **8.** 1512. Baldung. Berlin, 603. **9.** 1512. Jörg Breu. Berlin, 597 A. **10.** 1514. Monogrammist I. M. Prag, 177. **11.** 1514. Hungarian School. Budapest, 5. **12.** 1515. Altdorfer. Vienna, 1422. **13.** 1515. Baldung. Vienna, 1424. **14.** 1515. L. Cranach the Elder. Vienna, 1453. In spite of the difference between the second and fourth numeral, both probably represent 5. **15.** 1516. Baldung. Prag, 27. **16.** 1519. Dürer. Vienna, 1443. **17.** 1520. Hans Brosamer. Vienna, 1477. **18.** 1526. Dürer. Vienna, 1448. **19.** 1528. L. Cranach the Elder. Stockholm, 1080. **20.** 1528. Wolf Krodol. Vienna, 1472. **21.** 1529. Ruprecht Heller. Stockholm, 272.

TABLE XXX. GERMAN PRINTED BOOKS, WOODCUTS, ETC.

1. 1464. Woodcut. Dodgson, *Catalogue of Early German and Flemish Woodcuts in the British Museum*, i (1903), A. 25. **2.** 1470. Block-book, *Biblia Pauperum*. (B.M., I B. 3.) **3.** 1470. Rolewinck, *Sermo in festo praesentationis beate Marie Virginis*. Cologne. (B.M., I A. 3102.) The first figure 1 is of course merely a capital letter I. **4.** 1471. Block-book, *Biblia Pauperum*. (B.M., I C. 5.) **5.** 1473 (after October). *Fasciculus Temporum*. Cologne. (B.M., I B. 3805.) **6.** 1474. Regiomontanus, Nürnberg. (B.M., I A. 7888.) **7.** 1477. *Fasciculus Temporum*. Cologne. (B.M., I B. 3128.) **8.** 1479. *Fasciculus Temporum*. Cologne. (B.M., I C. 4371.) **9.** 1481. Woodcut by Hans Schauer. Dodgson, *Catalogue*, i, A. 120. **10.** 1482. Woodcut. Dodgson, *Catalogue*, i, A. 123; Schreiber, *Manuel*, 1881.

¹ See also Supplementary Table L. II.

11. 1488. Woodcut in Augsburg Boethius. D. E. Smith, *Rara Arithmetica*, p. 26. 12. 1496. Woodcut: Andechs or Munich. Dodgson, *Catalogue*, i, p. 120. 128. 13. 1499. Woodcut by Mair of Landshut. Dodgson, *Catalogue*, i, p. 149. 145. 14. 1499. Woodcut by Mair of Landshut. Dodgson, *Catalogue*, i, p. 149. 143. 15. 1499. Woodcut by Burgkmair. Schreiber, *Manuel*, 2022; *Catal.* 40, pl. xv. 16. 1500. Johann Widman, *Behennd vnd hüpsch Rechnung* (Commercial Arithmetic). Pforzheim. D. E. Smith, *Rara Arithm.*, p. 37. 17. 1503. From Reisch, *Margarita Philosophica*. Freiburg, 1503. Woodcut title-page. 18. 1504. Dürer. Nativity (B. 2). 19. 1507. Woodcut in the 1507 Algorithmus (Leipzig). D. E. Smith, p. 88. 20. 1508. Dürer. Copper engraving, St. George on Horseback.

TABLE XXXI. GERMAN COINS.

All from specimens in the British Museum, except no. 15, which is : 1504. Salzburg, Archbishop Leonhard. *Blätter f. Münzfreunde*, 1909, pl. clxxxiv. 5.

TABLE XXXII. GERMAN COINS.

All from specimens in the British Museum, except nos. 2 (from a photograph), 8 (from *Anzeiger*, 1861, 232), and 11 (from a specimen in Mr. Rosenheim's collection).

TABLE XXXIII. GERMAN MEDALS.

1. 1499. Ladislaus II of Hungary. Domanig, *Die deutsche Medaille*, No. 6. 2. 1507. Albert IV of Bavaria. Domanig, no. 32, pl. iv. 3. 1508. Michael Wolgemut, attributed to Dürer. The date was incised in the model. Rosenheim Collection. 4. 1512. Friedrich, Duke of Saxony. The date has the appearance of being punched in. Rosenheim Collection. 5. 1514. "Dürer's Father," attributed to Dürer. Rosenheim Collection. 6. 1524. Magdeburg, Cardinal Albert of Brandenburg.

TABLE XXXIV. SWISS COINS.

All from specimens in the British Museum.

TABLES XXXV-XXXVIII. LOW COUNTRIES. COINS, ETC.

The numerals in Tables XXXV-XXXVIII are taken chiefly from specimens in the British Museum, supplemented by the illustrations in the various volumes by Van der Chijs on Netherlandish coins.

TABLE XXXV.

1, 4, 8, 10 are from coins of Flanders. 2, 5, 7, 9, 11, 16 are from coins of Brabant. 3, 6, 13 are from coins of Gelderland. 12, 14, 15 are from coins of Holland.

TABLE XXXVI.

1, 4, 6 are from coins of Utrecht. The last might possibly be read 1487, but the distinct curve in the tail of the doubtful figure suggests that we have an analogy to the German 5; in other cases (as Table XXXVIII. 2 and 6) the form of 5 is still nearer to the modern 7. Compare also the Gelderland forms, Tables XXXVII. 15 and XXXVIII. 16. 2, 7, 14 are from coins of Brabant. 3, 5, 9, 11, 13 are from coins of Holland. 8, 15 are from coins of Friesland. 10 is from a coin of Gelderland. 12, 16 are from Flemish jetons.

TABLE XXXVII.

1. Medal of Archbishop Schevez of St. Andrews. The belief that this medal is of Flemish origin is confirmed by evidence which will be published by Dr. R. F. Burckhardt of Basel.

Schevez was out of Scotland, on a journey to Rome, at the time the medal was made. **2, 15** are from coins of Gelderland. For the "German" 5 in the latter compare Table XXXVI. **6, 3, 5, 9** are from coins of Utrecht. **4, 8, 10, 20, 21** are from jetons. In No. 10 the two forms of 4 are not on the same piece, but on two different jetons of the same year. **6** is from the Montagu specimen of the so-called "Perkin Warbeck groat", which, there can be little doubt, was struck in Flanders, and is not a coin but some sort of counter. Franks and Grueber, *Medallic Illustrations*, i, p. 21, no. 3. **7, 12** are from coins of Holland. **11, 19** are from coins of Friesland. **13, 14, 17, 18** are from coins of Brabant. **16** is from a coin of Luxemburg.

TABLE XXXVIII.

1, 4, 7, 12, 14 are from coins of Brabant. **2, 6, 8** are from coins of Utrecht. The form of 5 on nos. 2 and 6 has already been noticed. **3, 5, 9, 11, 13, 15, 17-22** are from jetons. The last is given as an instance of a form of 5 which might easily be mistaken for 3. **10, 16** are from coins of Gelderland, the latter showing the "German" 5.

TABLE XXXIX. LOW COUNTRIES: PAINTINGS.

1. 1432. 10 Oct. Jan van Eyck. National Gallery, 290. **2.** 1433. Jan van Eyck. National Gallery, 222. The date is written M^cCCCC^o.33^o.21 Oct. **3.** 1434. Jan van Eyck. National Gallery, 186. **4.** 1438. 31 Januarii. Jan van Eyck. Berlin, 528. **5.** 1446. Petrus Cristus. Portrait of Edward Grimston, at Gorhambury. *Archaeologia*, xl, p. 459. **6.** 1462. Flemish School. Portrait of a man. National Gallery, 943. **7.** 1474. Flemish School. Martyrdom of St. Erasmus. Library of Soc. of Antiquaries. Scharf's *Catal.*, p. 13 f. **8.** 1514. Atelier of Quentin Matsys. Stockholm, 505. **9.** 1516. Gossart. Berlin, 648. **10.** 1523. Jacob van Utrecht. Berlin, 623 A. **11.** 1528. Jan van Rillaer. Berlin, 1630.

TABLE XL. FRENCH MEDALS.

1. 1485. Aymar de Prie. From the Paris specimen. I have placed this among the French medals, although it has some affinities with N. Italian work. But I can find no evidence of Aymar de Prie's having visited Italy so early as 1485. The medal has been attributed to a later date, but I am by no means sure that Friedländer (*Die geprägten Medaillen*, p. 15) is not right in insisting that it was struck in 1485. **2.** 1486. Charles de Bourbon. British Museum. Cast. **3.** 1493. Charles VIII and Anne de Bretagne. British Museum. Struck at Lyons; the work of Louis Lepère, Nicolas de Florence, and Jean Lepère. **4.** 1494. Medal issued at Vienne on the birth of the Dauphin, Charles-Orland. See Heiss, *Niccolò Spinelli*, etc., p. 53; Maze-rolle, *Les Médailleurs français*, pl. ii. I note, as a matter of interest to numismatists, that there is in the British Museum (Dept. of British and Mediaeval Antiquities) a seal-like reproduction of this medal in cast bronze, the representation being sunk, instead of in relief. To make it, a specimen of the medal must have been taken, two wax impressions made from it, these two impressions placed back to back, the whole covered with moulding material, and the present piece cast by the *cire perdue* process. **5.** 1499. Lyons medal of Louis XII and Anne de Bretagne. Cast. **6.** 1512. François I. *Trésor de Numismatique, Méd. fr.* i, pl. x. 1. Possibly not French. **7.** 1512. Florimond Robertet. *Op. cit.* i, pl. xliii. 3. Possibly not French. **8.** 1518. Medals of Jacques de Vitry, Pierre Girard de Rhodéz, Jean de Talaru, Antoine de Toledo. British Museum, etc. All misread 1515 by some old writers, owing to the peculiar shape of the 8.

TABLE XLI. ITALIAN PAINTINGS.¹

1. 1472. Carlo Crivelli. Virgin and Child. R. H. Benson Collection. *Catal. of the National Loan Exhibition*, 1909-10, no. 71. **2.** 1473. Giov. Boccato (Umbrian School).

¹ For a painting dated 1391, see Supplementary Table L. 5; for others of 1464, above, p. 147, note 1.

186 EARLY USE OF ARABIC NUMERALS IN EUROPE

Budapest, 74. 3. 1474. Antonello da Messina. Berlin, 18 A. 4. 1475. Antonello da Messina. Louvre, 37. 5. 1477. Antonello da Messina. National Gallery, 1166. 6. 1477. Bartolommeo Vivarini. Vienna, 10. 7. 1485. Bartolommeo Vivarini. Berlin, 1160. 8. 1487. Bonsignori. National Gallery, 736. 9. 1489. Francesco Tacconi. National Gallery, 286. 10. 1496. Carpaccio. Vienna, 7. 11. 1497. Niccolò da Foligno. Budapest, 82. 12. 1497. Ant. da Carpi. Budapest, 123. 13. 1499. Macrino d'Alba. Imbert Collection, *Burlington Magazine*, May, 1909, p. 115. This is not, as there stated, a portrait of the painter, the inscription implying the very contrary. 14. 1502. Lorenzo Costa. Berlin, 112. 15. 1502. Francesco Francia. Berlin, 122. 16. 1510. Florentine: atelier of San Marco. Vienna, 38. 17. 1511. Fra Bartolommeo. Borghese Gallery, 310. From Lafenestre. 18. 1511. Andrea Solario. Borghese Gallery, 461. From Lafenestre. 19. 1515. Basaiti. Vienna, 1. 20. 1515. Panel (marriage tray) in Victoria and Albert Museum. Madonna and Child and two angels. 21. 1516. Fra Bartolommeo. Vienna, 41.

TABLE XLII. ITALIAN PAINTINGS (*continued*).

1. 1521. Lorenzo Lotto. Berlin, 325. A similar form of 5 occurs on Venetian medals (Table XLV. 11-14). Its origin is seen in forms like those on no. 20 of preceding Table. 2. 1522. Franciabigio. Berlin, 245. 3. 1523. Andrea del Sarto. Portrait of himself. Panshanger. [National Loan Exhibition, 1909-10, no. 45.] 4. 1526. Mazzolino. Vienna, 88. 5. 1531. Lorenzo Lotto. Berlin, 323.

TABLE XLIII. ITALIAN MAJOLICA.

1. Mid. XV. cent. Majolica roundels of the Months, by Luca della Robbia, in the Victoria and Albert Museum. These show the characteristic Italian forms of the time. The figures in the July are restored, and the fraction may possibly have once been $\frac{2}{3}$. My attention was called to these by Mr. E. D. MacLagan, who informs me that the roundels must date before about 1460, or 1464 at the latest. 2. 1487. Faenza. Fortnum, *Majolica*, p. 88. 3. 1489. Forlì. Plaque in Victoria and Albert Museum (490. '64). 4. 1491. Faenza. Fortnum, p. 92. 5. Gubbio plaque by Giorgio Lombardo in the British Museum. 6. 1503. Faenza. Fortnum, p. 109. 7. 1508. Castel Durante. Fortnum, p. 49. 8. 1509. Caffaggiolo. Fortnum, p. 3. 9. 1513. Faenza. Fortnum, p. 117. 10. 1513. Tile in British Museum. Wallis, *Italian Ceramic Art: the majol. pavement tiles of the fifteenth century*, fig. 91. 11. 1518. Gubbio. Fortnum, p. 28. 12. 1524. Gubbio. Fortnum, p. 30. 13. 1526. Gubbio. Fortnum, p. 34. 14. 1528. Gubbio. Fortnum, p. 36. Anywhere but in Italy, this might possibly be 1524, the 4 being inverted. But a badly made o is not out of the question. 15. 1528. Gubbio. Fortnum, p. 33. 16. 1530. Gubbio. Fortnum, p. 36.

TABLE XLIV. ITALIAN MEDALS, ETC.

1. 1390. Medal of Francesco Carrara. *Periodico di Numismatica*, i, pl. vii. 5. Struck. 2. 1393. Venetian medal, by Marco Sesto. *Op. cit.* i, pl. vii. 1. Struck. 3. 1417. Venetian tessera, by Alessandro Sesto. *Op. cit.* i, pl. vii. 3. Struck. 4. 1446. Sigismondo Malatesta, by Matteo de' Pasti. British Museum. 5. 1447. Isotta Atti, by Matteo de' Pasti. Incised on the model; the 1 is obscure. Heiss, *Les Médailleurs de la Renaissance, Alberti*, pl. viii. 4. 6. 1448. Antonio Marescotti, by Marescotti. Heiss, *Marescotti*, etc., pl. ii. 2. Incised on the model. There is no reason to doubt its contemporaneity. 7. c. 1460. Antonio Roselli, by Bartolommeo Bellano. From the British Museum specimen. The figures 91 cannot indicate Roselli's age if, as seems to be the fact, he died, aged 85, on Dec. 10, 1466. See Semrau, *Donatello's Kanzeln*, p. 151. 8. 1461. Taddeo Manfredi, by Enzola. From

the British Museum specimen. **9.** 1464. Paul II. From the Paris specimen. Although this medal is made from one of Paul's medals of 1455, when he was Cardinal of San Marco, by reworking the model, there is no reason to suppose that it is not contemporary with the date which it bears. **10.** 1470. Galeazzo Maria Sforza, probably by Caradosso. Friedländer, *Ital. Schaumünzen*, pl. xxxvi. 11. **11.** 1472. Ercole I d'Este, by Baldassare Estense. Heiss, *Niccolò*, etc., pl. v. 1. **12, 13.** 1479. Medals by Candida of Jehan Miette and Jean Carondelet respectively. The occurrence of the old form of 4 on these medals by an Italian is explained by their having been made at Lille and Paris. The same fact accounts for the old 7 on no. 12. But the new 7 occurs on no. 13; compare the variation on the coins of the Low Countries about this time, Table XXXV. 9 ff. **14.** 1481. Alfonso, Duke of Calabria, by Guazzalotti. Heiss, *Florence*, i, pl. iii. 5. **15.** 1481. Mahomet II, by Constantius. British Museum. **16.** 1485. Bernardo Gambara. Roman School. Rosenheim Collection. **17.** 1485. Fabrizio Marliano. From the Berlin specimen. **18.** 1489. Pietro Vettori. Heiss, *Florence*, i, p. 45, after Litta. The drawing may therefore be inaccurate. **19.** 1495. Lorenzo Cigliamocchi. By himself? Heiss, *Florence*, i, pl. xiii. 2. **20.** 1497. Pattern (bronze) for testoon of Lodovico il Moro. British Museum. Gnechi, *Monete di Milano*, pl. xvii. 5.

TABLE XLV. ITALIAN MEDALS (*continued*).

1. c. 1498. Aless. Vecchietti. Florentine. The figures 26 give his age; he was born in 1472. British Museum. **2.** 1499. Giangiacomo Trivulzio. By Caradosso. British Museum. **3.** 1502. John Greudner, by Niccolò Fiorentino or his school. British Museum. **4.** 1503. Lodovico Marchese di Saluzzo and Marguerite de Foix. North Italian. **5.** 1505. Ercole I d'Este. Heiss, *Niccolò*, etc., pl. vii. 4. **6.** 1513 (written MDI3). Louis XII. Probably Milanese work. British Museum. **7.** 1515. Pietro Antonio da Castello. From the Paris specimen. **8.** 1516. Marguerite de Foix, by "J. J. C." North Italian (Genoese?) work. British Museum. **9.** 1538. Antonio Mula, by Spinelli of Venice. With the broken-topped 8 compare Table XLIII. 14. Struck. **10.** 1539. Giov. Vinc. Dolci, by Giovanni Cavino of Padua. Struck. British Museum. **11.** 1539. City of Venice. By Spinelli. Struck. British Museum. With the peculiar 5 compare that on the painting (also Venetian) by Lotto, Table XLII. 1. **12.** 1540. Girolamo Quirini. By Spinelli of Venice. Struck. British Museum. For the 5 see preceding. **13.** 1542. Venetian, by Spinelli. Struck. British Museum. For the 5 see no. 11. **14.** 1549. Girolamo Zane. By Spinelli of Venice. Struck. British Museum. For the 5 see no. 11.

TABLE XLVI. ITALIAN. VARIOUS.¹

1. 1423. Venice, monument of Tommaso Mocenigo, in SS. Paolo e Giovanni. See Friedländer, *Period. di Numism.* i, p. 146. From a squeeze supplied by the architect of St. Mark's through Mr. Horatio Brown. **2.** 1428. "formato a di 17 di gienaio 1428, formato nel Gabinetto (?) di Nicholo in gesso." Scratched in the wet stucco on the back of a stucco relief in the Ashmolean Museum (Fortnum). The relief has been rashly condemned, but also defended; consulted about the inscription, both Mr. Warner and Mr. Herbert independently, and without seeing the date, pronounced it to be of the XV cent. See Bode, *Florentiner Bildhauer* (1902), p. 162; *Florentine Sculptors* (London, 1908), p. 97, where it is assigned to Luca della Robbia. Other references, kindly supplied by Mr. C. F. Bell, are M. Reymond, *Les della Robbia* (1897), p. 111; Fortnum, *Athenaeum*, Dec. 18, 1897; Bode, *Denkmäler*, pl. 191, pp. 73-74; *Rivista d'Arte*, Jan. 1905. **3.** 1459. Reggio d'Emilia. On a sculptured lunette in the Museo Civico. Venturi, *Storia dell' Arte italiana*, vi, p. 816. **4.** 1471. On a statue of the Madonna by Francesco Laurana at Noto (Sicily). Rolfs, *Franz Laurana*, pl. 39. **5.** 1474. On a

¹ See also Supplementary Tables L, LI.

bust of Pietro di Francesco Mellini, Mus. Naz., Florence. Mr. Walter Ashburner, who kindly sends a note of this example, says that the whole inscription (which is *inside* the bust) is AN · 1474 | PETRI · MELLINI · FRANCISCI · FILII · IMAGO · HEC, and that while the second line is the work of a practised stone-cutter, the date is simply scratched in; it is, he thinks, though not part of the inscription, contemporary, perhaps done by the artist himself. 6. c. 1495. On the Loggia di San Paolo, Florence, under the two busts by Andrea della Robbia at the West and East ends of the series on the façade. The inscription is DALL ANNO 1451 ALL ANNO 1495. (Communicated by Mr. Walter Ashburner.) The left-hand (western) portion is illustrated in M. Reymond, *Sculpt. Flor.* ii, p. 182.

TABLE XLVII. ITALIAN. PRINTED BOOKS, ENGRAVINGS, ETC.

1. So-called "Tarocchi of Mantegna". From series in the British Museum. These are not really playing cards. The first series (according to the arrangement adopted in the British Museum) is as early as 1467; the second (see no. 2, and the 6 and 7 in no. 1) may be 10 to 20 years later. But according to Kristeller this supposed second series is really the first. Apart from other reasons against this inverted arrangement, it may be noted that the numerals in the "Arithmetic" are more likely to have been added than removed in a second series. On these engravings see A. M. Hind, *Catalogue of Early Italian Engravings in the British Museum*, p. 224. 2. On a tablet held by figure of Arithmetic, on the so-called Tarocchi cards (one of the copies; the original series is without it). The tablet gives the numerals from 1 to 10, and abbreviations which have been read as a date 14085, but which seem to represent a sum of money (perhaps L(ire)40 S(oldi)5). From a specimen in the British Museum. 3. 1478. Treviso Arithmetic. D. E. Smith, *Rara Arithm.*, pp. 5, 6. 4. 1479. Venice, J. Marchesinus, *Mammotrectus*. British Museum, I A 19729. 5. 1484. Venice, Regiomontanus, *Ephemerides*. British Museum, I A 20533. 6. 1491. From Calander's Arithmetic, Florence, 1491. D. E. Smith, *op. cit.*, p. 47. 7. 1492. From Pellos' Arithmetic, Turin, 1492. Smith, *op. cit.*, p. 51. 8. 1509. Italian engraving (Paris and "Egenoe") after a German original, which accounts for the forms, especially of the 5. British Museum, v. 1-44.

TABLE XLVIII. INSCRIPTIONS FROM RHODES.

1. 1447. Graffito in Philereinos crypt. Belabre, *Rhodes of the Knights*, pp. 186, 187. 2. 1457. Graffito in chapel on top of tower on rampart. Belabre, p. 92. 3. 1459. Graffito in Philereinos crypt. Belabre, p. 186. 4. 1489. Shield on outwork of Spanish Tower, with arms of Pierre d'Aubusson. Belabre, p. 58. 5. 1490. Inscription of Cardinal Pierre d'Aubusson. Rottiers, *Monumens de Rhodes*, pl. lxxiv. 6. 1492. Inscription of Aymery d'Amboise. Rottiers, *Monumens de Rhodes*, pl. liii, fig. 9. 7. 1494. Graffito in Philereinos crypt. Belabre, p. 187. 8. 1495. Inscription of Cardinal Pierre d'Aubusson. Rottiers, *op. cit.*, pl. lxiii, 2. 9. 1497. Shield of Vilaraguts on a house. Belabre, p. 149. 10. 1502. Funerary slab of Thomas Newport, Spanish Tower. Belabre, p. 59. 11. 1506. Graffito in Philereinos crypt. Belabre, p. 186. 12. 1509. Slab in Street of the Knights. Belabre, p. 121. 13. 1511. Tombstone of Nicolas de Monmirel in courtyard of old Konak. Belabre, p. 164. 14. 1515. Shield of Carretto, Gate of Athanasios. Belabre, p. 66. 15. 1517. Shield of a knight. Belabre, p. 149. 16. 1518. Shield of Prior Flota, Street of the Knights. Belabre, p. 108. 17. 1519. Inscription of Jean Cheron in the Street of the Knights. Belabre, p. 109. 18. 1520. Shield on a house in the Street of the Knights. Belabre, p. 106.

TABLE XLIX. GERMAN (SUPPLEMENTARY).

1. 1383. Wertheim. Outside nave of the Evangelical Church. Mr. Lockner, who supplies the rubbing, questions the antiquity of the date; but the forms are excellent. 2. 1419.

Wertheim. Outside tower of Evangelical Church. Rubbing by Mr. Lockner. 3. 1484. On a stone formerly in the possession of the Historischer Verein, now in the Fränkisches Museum at Würzburg, with a scene from St. Luke i. 26 ff. From a rubbing by Mr. Lockner. See Denzinger, p. 170. The 8 is broken away below. 4. 1492. Wertheim. Rathaus, outside wall. Rubbing by Mr. Lockner. The form of the 1 is not clear to me. 5. 1493. On the stone brackets supporting the figures of Adam and Eve by Riemenschneider, in the Fränkisches Museum, Würzburg. Rubbings by Mr. Lockner. 6. 1497. On arch of passage through the Choir in the Church of St. Burkard, Würzburg. Denzinger, p. 170. From a drawing by Mr. Lockner. 7. 1498. Very neatly cut on a pillar in the church of the Monastery of Brombach near Wertheim. Drawing by Mr. Lockner. 8. 1514. In the Fränkisches Museum, Würzburg; armorial slab of Bishop Lorenz von Bibra, from the old Landgerichtsgebäude. From a rubbing by Mr. Lockner.

TABLE L. MISCELLANEOUS AND SUPPLEMENTARY. XIII-XV CENT.

1. *circa* 1260? Astrolabe in British Museum. The style of the numerals would be equally possible, if not more probable, at a rather later date. 2. 1276. MS. Cambridge University Library, *Ii* 3. 3. Treatise on the astrolabe by Macha-allah (Astrolabium Messehalle). See W. E. A. Axon, *Proc. Manchester Lit. and Phil. Soc.*, 1876, p. 175; and W. W. Skeat's ed. of Chaucer's *Treatise on the Astrolabe* (E. E. T. S. and Chaucer Soc., 1872), pp. xxiv and 88 ff. Mr. S. C. Cockerell, who kindly supplied a note of the forms of the numerals, is inclined to suggest Liège or neighbourhood as the source of the MS. 3. 1326. Astrolabe in the British Museum bearing this date. 4. 1342. Astrolabe in the British Museum, signed "Blakene me fecit anno doⁱ 1342." Mentioned *Arch. Journ.* xi. 30. 5. 1391. Painting (triptych) by Spinello Aretino at Florence (R. Galleria Antica e Moderna: Virgin and Child and SS. Paulinus, John Baptist, Andrew, and Matthew). In relief below central panel. From a photograph. Communicated by Mr. A. H. S. Yeames. The lettering is the same as on the halo of the Virgin. The inscription appears to be HOC · OPVS · PINXIS · SPINELLVS · LVCE · ATITIO · IO · I · A · 1391. Mr. Yeames remarks that it may have been added or touched up at a later date, but has not that appearance. 6. 1410. Seal of Fountains Abbey. Impression attached to document of 1424 at Durham. See J. R. Walbran, *Memorials of the Abbey of St. Mary of Fountains* (Surtees Society, 1863), p. lxix. Communicated by Mr. W. H. St. John Hope. 7. 1417. On the under side of the base of a chalice of gilt metal with silver bowl and four small nielli around the knop. *Arch. Journ.* xi, p. 72 (where it is read 1517). The provenance is not stated. 8. 1444. Florence, Santa Trinità. Inscription on sarcophagus of Giuliano Davanzati. 9. 1451. Armorial tablet of Ludovico dei Caccialupi of Bologna, Podestà of Florence, 1451. Court of Bargello, Florence. 10. 1451. Flemish painting (Angel of the Annunciation), at present in the possession of the Spanish Art Gallery. Although the forms seem flatly to contradict most of the other Flemish evidence, I have included this example. The picture came from Spain. Communicated by Mr. E. D. MacLagan. 11. 1452. German painting (1580-'55; *Annunciation*) in the Victoria and Albert Museum. Communicated by Mr. E. D. MacLagan. The date is written on a slant. It has generally been read 1472, but there can be little doubt that the figure which has been taken for a 7 is a 5. 12. 1453. Portable brass sundial (German) in British Museum.

TABLE LI. MISCELLANEOUS AND SUPPLEMENTARY. XV-XVI CENT.

1. 1461. Italian (Florentine) engraving in the British Museum (Easter Table). A. M. Hind, *Catalogue of Early Italian Engravings*, A. i. 9. Communicated by Mr. Hind. 2. 1467. Bruzzano, near Milan. Carved on entrance of a villa. *Rassegna d'Arte*, 1903, p. 88. 3. 1470. Armorial tablet of Iohannes de Panaleutiis of Cività Castellana, Podestà of Florence,

1470. Court of Bargello, Florence. 4. 1485. On Isbury's Almshouses, Lambourne, Berks (Rubbing, Soc. of Antiquaries). Communicated by Mr. Mill Stephenson. The 5, which is imperfect on the rubbing (and on the original?), is of the h-shape usual at this time in England. 5. 1489. On painted panels in south aisle of Choir of St. George's Chapel, Windsor. Communicated by Mr. W. H. St. John Hope. 6. 1491. Viennese astrolabe in the British Museum, made by "Pruder Hanns Dorn Prediger Orden von Wien anno Domini 1491". 7. 1492. Hurley, Berks. Brass of John Doyly. (Rubbing, Soc. Antiq.) Communicated by Mr. Mill Stephenson. 8. 1492. Stanford Rivers, Essex. Brass of Thos. Greville. (Rubbing, Soc. Antiq.) Communicated by Mr. Mill Stephenson. 9. 1497. Quarry in window at St. Cross. *Journ. Brit. Arch. Assoc.* ix (1854), pl. xxxiv; *Arch. Journ.* 1850, p. 76. Drawing by Mr. Mill Stephenson. 10. 1497. "Anathema" cup at Pembroke College, Cambridge. From a rubbing by Mr. Ellis Minns. On the under side of the foot. The inscription is given by Mr. Minns: "T. langton Winton eþs aule pembrochie olim foci⁹ dedit hāc taffeā cooptā eidē aule ·1·4·9·7" and also "qui alienauerit anathema fit. lxvii . ũnc." See also J. E. Foster and T. D. Atkinson, *Old Cambridge Plate*, p. 6, no. 8. The hall-mark is of 1481-2. The top is lost. 11. 1498. Norwich, St. Stephen's. Brass of John ffrankish. (Rubbing, Soc. Antiq.) Communicated by Mr. Mill Stephenson. 12. 1499. Bell (probably Flemish or Dutch) at Swinton in Berwickshire: see *First Report of Ancient Monuments Commission (Scotland)*, p. 49, No. 242. Communicated by Mr. George Macdonald. 13. 1513. Brading, I.W. Cut on stone in niche behind pulpit in the church. Communicated by Mr. Percy Stone. This has been read Mld13, but the M is really an Å, and the top bar of this letter has run into the top of the following I making it look like l; while the supposed d is an h-shaped 5 reversed. 14. 1522. Windsor. Below the paintings on north side of Oxenbridge Chapel, St. George's Chapel. Communicated by Mr. W. H. St. John Hope. 15. 1526. Window in South Mimms Church, Middlesex. T. Wright, *Essays*, ii, p. 81. 16. 1530. E. window in vestry, Enfield, on a medallion with the arms of Thomas Lord Roose. Gough ii (1), p. 140, and pl. xlix*. 17. 1531. On an English leaden token, probably of John Saltcot, Abbot of Hyde, 1530-1538. See *Journ. Brit. Arch. Assoc.* ix, p. 432.

IX.—*St. Paul's School before Colet.* By A. F. LEACH, Esq., M.A., F.S.A.

Read 25th November, 1909.

To talk of St. Paul's School before Colet will to most people seem pure absurdity. Even those who know there was such a school think that it was only a poor sort of choir-boys' school, and would be inclined to apply to it, *mutatis mutandis*, the famous Scotch bull on the roads in the Highlands:

If you'd seen these roads before they were made,
You'd hold up your hands and bless General Wade.

Yet in fact the difficulty in writing of St. Paul's School before Colet arises not from a deficiency but from a superfluity of material.

Immemorial custom prescribed, and the law of the Church, the canon law, in terms directed, that every cathedral church and every other collegiate church of sufficient means should maintain a grammar school. This grammar school was not only, or mainly, or indeed hardly at all, a choir school, a school for choristers, but was a school for the city, for the children of the citizens of the cathedral city, in which not singing and the psalms, not reading or the prayers of the Church, were taught, but the art or science of grammar and dialectic, that is to say, the classics, as the classics were understood at a time when Latin was the only door to both modern and ancient learning. There was indeed, equally of course, attached to every cathedral church, a song school, which was a real choir school, a school in which not only singing but elementary subjects, reading, and the rudiments of grammar were taught, and which was mainly, though not wholly, attended by the choir-boys, or queristers, as they were called in the fourteenth century, as they are at Winchester to this day. But the two schools were entirely distinct; were under different officers, and had no connexion with one another, except that they both belonged to the same church. While the song school was invariably called the song school, or the music school, the grammar school was called *par excellence* "the school", sometimes the school of the cathedral church, more often the school of the city. As the proper name of Winchester School is the grammar school of St. Mary's College by Winchester, but it is called Winchester *simpliciter*, so while the proper name of St. Paul's School was the grammar school of the cathedral church of St. Paul, London, it

was in early times called simply the School of London. Afterwards, when schools in London multiplied, it was called St. Paul's School; but both before and after Colet, St. Paul's School meant as it means now, not the choristers' school or the choir school, but the grammar school of St. Paul's cathedral church.

In the twelfth century, and until the reign of Henry VIII, a grammar school was commonly, and until about 1450, almost invariably spoken of in the plural, *scole gramaticales*, and the schoolmaster was *scolarum magister*. The reason I do not pretend to assign. People still talk of being "in the schools" at Oxford, when they are attending a single school, of classics, of history, or mathematics. In the middle ages they talked of attending "the grammar schools" and of the "schools master". Whether it was from the multiplicity of subjects taught in the single grammar school, or that the grammar school was emphatically the school of schools, I do not know. It is noteworthy because a great deal of misconception has arisen from the plural having been wrongly interpreted to mean more schools than one.

These dogmas be general. But they apply with all their force to the particular school of St. Paul's. How ancient St. Paul's School may be we cannot tell. All analogy is in favour of its being coeval with the church. As has been shown elsewhere, St. Peter's School at York, the cathedral grammar school, can trace its descent from the year 736. London is not so ancient as York, nor St. Paul's cathedral church as St. Peter's minster. But, just as at York the earliest existing records of the minster show St. Peter's School existing, so the earliest existing records of St. Paul's show St. Paul's School existing. The earliest actual records there as here are post-Conquest, but here, as there, these earliest records treat the existence of the school as a matter of course. In the case of York we have other evidence which shows the existence of the school in early English days long before the Conquest. In the case of Warwick grammar school, maintained by Warwick collegiate church, the earliest post-Conquest document refers to the school as existing in the days of King Edward before the Conquest. At St. Paul's School we have no direct evidence of this kind. But it cannot be doubted that the second city in the kingdom in point of rank, Winchester still being the nominal capital, and the first in point of wealth and population, had its grammar school, and did not lag behind the capital of the North, or a comparatively unimportant place like Warwick, in its public provision for secondary education.

The earliest direct record of St. Paul's School is a deed, a copy of which is preserved in the thirteenth-century chartulary or deed-book of St. Paul's, known as *Liber A pilosus* from its hairy white deerskin covers. It was executed by Richard I. de Belmeis, "by the grace of God, minister of the church of London,"

and addressed "to William the dean, and the whole assembly (*conventui*) of brethren":

Know ye, my dearest sons, that I have confirmed to our beloved Hugh, schoolmaster, in virtue of the dignity of his mastership, and to his successors in the same dignity, the place (*stationem*) of Master Durand in the angle of the tower, namely where Dean William, by my command, placed him, between Robert de Auco and Odo.

I grant to him also and to the privilege of the school the custody of all books of our church.

That is, the schoolmaster was also to act as librarian, and the letter goes on to direct that the keys of the bookcases near the altar, just made by the bishop's order, are to be given him.

Richard became bishop 1108, and died 1128. The deed is between 1111, when William became dean, and 1128, and probably not long after 1111, as the bishop was paralysed for some years before he died. The next document we have is addressed by the same bishop to the same dean, and, after the death or retirement of Hugh, grants to

Henry, my canon, foster-son (*nutrito*) of Master Hugh, St. Paul's School, as honourably as the church ever held it at its best and most honourable wise: and the land of the court which the aforesaid Hugh inclosed for his house there; and the meadow which I gave the said Hugh in Fulham, viz. four acres, from the ditch to Thames, at 12*d.* a year; and in alms (*i.e.* in perpetuity, rent free) the tithes of Ealing and the tithes of Madeley.

This document was printed in Knight's *Life of Colet*, with some odd mistakes. The actual deed itself is extant (plate XX, A), as well as the copy in the chartulary. In the chartulary these deeds, and others to be mentioned, are headed: "Of the schoolmaster and chancellor, seven deeds," and in a later deed by Bishop Richard III., 1189 to 1198, a thirteenth-century hand has written: "Note of tithes granted to the schoolmaster of St. Paul's, now the chancellor." We have, therefore, direct evidence that the schoolmaster was afterwards called the chancellor, as at York we have conversely a statement in the fourteenth-century statutes that the chancellor was "formerly called the schoolmaster". When exactly the change of title began is not clear. For both at York and London, as at Edward the Confessor's foundation of Exeter cathedral church, and Harold's foundation of the collegiate church of the Holy Cross at Waltham, the title used was schoolmaster. But at Salisbury, a post-Conquest creation, the foundation statutes of the Norman bishop, "Saint" Osmund, about 1090, call him alternately chancellor and *archischola*, or schoolmaster. At St. Paul's the title chancellor prevailed from 1205 onwards.

The tower, by which Canon Durand built, was, as Dugdale says, the "clochier or bell-tower" which stood at the east end of St. Paul's. It was detached, like the towers of Chichester cathedral church and New College, Oxford, and many of the old campaniles. Its bell was used as the town bell as well as the church bell, to

summon the citizens to their folk-moots in the old *forum* or market-place on the north-east side of St. Paul's where Paul's Cross afterwards stood. The school, separated by the tower from the market-place, was thus in the very middle of things, between the two chief places of assembly, the chief church and the chief market. A later writer, Miss Hackett, attempted to correct Dugdale and transported the school outside the close and churchyard altogether, and half the length of the church westward, placing it down a back lane in a far less accessible site. She quoted in support a deed of Eustace, count of Boulogne, granting to the bishop "a mansion-place, whence Canon Durand had removed (*abstulerat*) his house because of the earl's claims on it". The quotation destroys her argument, as it shows that, while the canon had originally built outside the churchyard on the south, he had moved to a site further east, which the bishop gave him. Here, in the churchyard and not outside it, at the east and not the south of it, we find the school in the fifteenth century; and when Colet built his new school in the sixteenth century he built, as we shall see, next door to the old school. Miss Hackett has in this, as in other things, confounded the grammar school with the choir-boys' house, and, by consequence, the schoolmaster with the choir-boys' master.

Canon Henry, the schoolmaster, Hugh's successor, was the hero of a document of a remarkable kind, the original of which is also extant at St. Paul's (plate XX, B). It is very short:

Henry, by the grace of God, minister of the church of Winchester, to the chapter of St. Paul's, and William the archdeacon, and their ministers, health.

I command you by your obedience that, after three summonses, you pronounce sentence of excommunication against those who without the licence of Henry the schoolmaster presume to lecture, in the whole city of London, except those who teach the schools of St. Mary-le-Bow and St. Martin-le-Grand.

The historian Dugdale's comment on this runs, "Which Henry was so respected by Henry de Blois, Bishop of Winchester, that he commanded none should teach school in London without his licence except the schoolmasters of St. Mary-le-Bow and St. Martin-le-Grand." It does not seem to have struck him as odd that a bishop of Winchester should have power to issue decrees to the city of London, nor that the decree itself was a somewhat remarkable way of showing respect to a schoolmaster's ability. The simple fact is that the schoolmaster at St. Paul's, like the schoolmasters of the grammar schools of all other cathedral and collegiate churches, enjoyed a monopoly of keeping school within the district ecclesiastically governed by the church to which he belonged. The decree was not due to any special respect which Bishop Henry of Winchester entertained for Schoolmaster Henry of London. It was issued in the ordinary course of business by the bishop, who was, by commission from the Pope, in charge of the

diocese of London from 1138 to 1140, during the vacancy of the see, to enforce the legal monopoly of St. Paul's School against some unspecified rivals. Similar documents in the thirteenth and fourteenth centuries, enforcing a like monopoly by threats of excommunication, could be cited from York, Canterbury, and Beverley. At Winchester the same Bishop Henry was concerned in a similar case about this time, in which the Winchester schoolmaster enforced his monopoly against a rival who appealed to the Pope himself, while an attempt at the same thing was made there far on in the seventeenth century. The reason for the exemptions of St. Martin's-le-Grand and St. Mary-le-Bow from the monopoly was not that Henry of Winchester "specially respected" the schoolmasters there, but that St. Martin's-le-Grand, being an ancient collegiate church of Early English origin long before the Conquest, and reckoned as a "Royal Free Chapel", was exempt from the jurisdiction of the bishop, the ordinary. So was the church of St. Mary-le-Bow, or of the Arches, the seat of the court of the Arches, as a "peculiar" of the Archbishop of Canterbury. Both, therefore, could keep grammar schools in their precincts, and did unhindered by St. Paul's, and some of their masters are mentioned in the thirteenth and fifteenth centuries.

In a famous description of London, written about 1170, prefixed to a biography of his former master, Thomas à Becket, Fitzstephen, clerk and judge, bears singular testimony to the fact that these three schools were the only recognized schools of London. In London he says

The three chief churches have well-frequented schools of ancient privilege and dignity; though sometimes, through personal favour to some one famous in philosophy, more schools are allowed. On feast days the Masters hold assemblies at the churches *en fête*.

He then describes how the elder students hold disputations in logic and rhetoric, while

the boys of the different schools vie with each other in verses; or dispute on the principles of grammar, or the rules of preterites and supines (*i. e.* syntax, which was not then a part of grammar, but of dialectic); others, in epigrams, rhymes, and verses, use the old freedom of the highway, with Fescennine licence freely scourge their schoolfellows without mentioning names, hurl abuse and fun at each other, with Socratic wit gird at the faults of their schoolfellows, or even of their elders, while the audience wrinkle their noses as they roar with laughter.

The last words are a quotation from Persius, by this twelfth-century author, who, according to most writers on early schools, could have only learnt at a choir school to stumble through the Psalms. Becket must have attended St. Paul's School under Schoolmaster Henry. He was born in a house on the site of which now stands the Mercers' Hall, and Fitzstephen describes how, having "passed the years of his infancy, boyhood, and youth at home, and attended the school of the city, he when a young man studied at Paris". That is, while Becket was a boy,

about 1118, he attended St. Paul's School as a day-boy; when he became a young man, he was, as was then customary for aspiring literates, sent to Paris University; the first symptoms of Oxford University not appearing until some twelve years afterwards.

Fitzstephen's mention of the three principal churches which kept schools has given rise to some very wild guessing. The learned Stow rightly attributed the chief school to St. Paul's. But he assigned the other two to Westminster Abbey and St. Saviour's at Bermondsey, oblivious of the fact that neither of them was in London. Both were monasteries, which did not keep public schools, and were forbidden to do so except for their own novices. Many later documents, as well as the letter in favour of Schoolmaster Henry's monopoly, show that he was clearly wrong. There is no trace of any school at Westminster till the reign of Edward III, and then only of twelve charity boys in the almonry of the monastery. Among the statutes of St. Paul's, collected by Dean Baldock between 1294 and 1304, is one "Of the office and power of the chancellor". By this time the chancellor had ceased to teach school in person; and his duties as regards it were only "to appoint an M.A. to the grammar school, and to keep the school in proper repair", his principal office being, like the chancellor of the kingdom, to keep the seal and prepare legal documents. The statute says, "Under him are all scholars living in the city, except those of the Arches and St. Martin-le-Grand, who claim to be privileged in this as in other things." At the time of these statutes, the chancellor still had to make out the table of readers of the lessons in the church, to hear the readers so that they did not make mistakes, and to keep the clerks of the choir in order. A later statute, the date of which does not appear, headed "Of the grammar schoolmaster", says, "the schoolmaster, as vice-chancellor, is to write, or get written, the table of lessons." In the same statute the precentor and his deputy, the song schoolmaster, appear separately. It is expressly provided that the grammar schoolmaster "is to attend choir in a fitting habit, and read the first lesson on double [*i. e.* the greater] feasts, and to hear those who are to read and correct their mistakes. Also, according to custom, he is to hold disputations of dialectic and philosophy at St. Bartholomew's on St. Bartholomew's Day, and dispute at Holy Trinity."

Stow, who wrote in 1590, describes the disputations of schoolboys at St. Bartholomew's as having still gone on in his boyhood. The boys, he says, repaired

unto the churchyard of St. Bartholomew, where upon a bank boarded about under a tree, some one scholar hath stepped up and there hath apposed (the examiners at Winchester are still called posers, and the prize day at St. Paul's School itself is still called apposition day) and answered, till he were by some better scholar overcome and put down; and then the overcomer taking the place did like as the first, and in the end the best apposers and answerers had rewards.

The reason for the selection of St. Bartholomew's, Smithfield, was that, as appears from Fitzstephen, Smithfield, that "suburban level", as he calls it, was the usual resort of London, and especially schoolboy London, for all forms of sport and amusement. Here, even in the twelfth century, on Shrove Tuesday, after a cock-fight in the school in the morning, they played football; on its flooded marshes they skated on skates made of flat bones, such as are still to be seen in plenty in the British Museum and in the museum at York. It was not because St. Bartholomew's was a priory, but because it afforded an open space, that Smithfield was the resort of the schools of London. The boys resorted there before the priory was built, and continued to resort there afterwards, when Smithfield was gradually surrounded by St. Bartholomew's priory, hospital, and other buildings.

Right down to the time of Henry VI. St. Paul's with St. Martin's-le-Grand and the school of the Arches were the only recognized public schools of London. Unfortunately, nearly all the records of St. Paul's cathedral church from the fourteenth century till after the Reformation have disappeared. One solitary chapter act book, or minute book, in the middle of the fifteenth century survives, but it is almost entirely concerned with continual renewals of leave of absence to residentiary canons, the distribution of profits among them, and the correction of vicars choral for devotion to the forbidden sex. There has been a total disappearance of books of the kind which have enabled the grammar school at York to be traced continuously from the thirteenth century to the present time.

A transcript of one book has, however, been preserved which ought to have hindered writers on the subject of St. Paul's School from confounding the grammar school with the choristers' school. This is a copy of "the register of the almonry of St. Paul's".¹ To the early cathedral churches a hospital or almshouse was as essential an appendage as a choir and a grammar school. Some of these hospitals still survive. The Dean of Hereford is still *ex officio* Master of St. Ethelbert's Hospital, attached to St. Ethelbert's cathedral church. York had its St. Peter's Hospital, afterwards called St. Leonard's Hospital, the ruins of the chapel of which yet stand a stone's-throw from the minster. St. Paul's had its almonry, a Norman French word for almshouse, and its almoner. In some cathedral statutes made in 1263 the almoner was enjoined to distribute alms according to the method ordained by those who gave endowments for the purpose; poor people and beggars, who died in or near the churchyard, he was to bury gratis without delay. He was to have, moreover, daily with him eight boys fit for the service of the Church, whom he is to have instructed either by himself or by another master in matters pertaining to the service of the Church and in literature (*i. e.* grammar) and good behaviour, taking no payment for the same.

¹ Brit. Mus. Harl. MS. 1080.

Long before this, in the deanery of Ralph de Diceto, between 1180 and 1200, it was ordered that, "as the boys of the almonry ought to live on alms" (or, as we should say, "charity boys are to live on charity"), "they are to sit on the ground in the canons' houses, not with the vicars at table." The resident canons on certain days had to entertain the choir-singers, or vicars choral and choir-boys at dinner. The reason is assigned "lest they become uppish and when they go back to the almonry despise the food there and blame their master". Now these almonry boys were the choir-boys, who learnt singing in the choir school, which the precentor had to maintain. But, as the fourteenth-century almoner records, against himself, in his register:

If the almoner does not keep a clerk to teach the choristers grammar, the school-master of St. Paul's claims 5s. a year for teaching them, though he ought to demand nothing for them, because he keeps the school for them, as the treasurer of St. Paul's once alleged before the dean and chapter is to be found in ancient documents.

The attempt thus made by the treasurer to make the grammar school into a choir school thus early is curious. The allegation that the grammar school was kept for the choristers is historically untrue, though it is probably true that the choristers ought to have been admitted free to it. At Beverley, in 1312, when the grammar schoolmaster wished to make all choristers beyond seven, the original number, who attended the grammar school, pay fees, the succentor, the song schoolmaster, contended that he was bound to teach all the choristers free. After inquiry by the chapter into the "ancient customs" of the church, it was decided that the grammar schoolmaster was bound to teach them gratis, but the succentor was not to defraud him by admitting boys to the choir merely for the sake of getting free education in the grammar school. Whatever may have been the choristers' rights in the matter, the fact that the grammar schoolmaster at St. Paul's claimed and received payment for them shows with absolute conclusiveness that the grammar school was not a mere choir school, or choir-boys' school.

Yet Mr. Lupton, the late surmaster of St. Paul's School, in his *Life of Colet*, cites the will of one of the almoners, William of Tolleshunt, made in 1329, in favour of those almonry boys, as proof that the cathedral school "not only existed and flourished but contained within itself the germs of a University". By the will in question this almoner gave a shilling to each senior and sixpence to each junior of "the boys of the church whom I educated in the almonry", and also gave them his grammar books "and the volumes of boy-bishops' sermons, preached in my time, to remain in the almonry for ever for their use". Says Mr. Lupton: "There were works on Logic, on Physic, on Medicine, on Civil Law . . . all were expressly bequeathed to the use of the boys." Yes: but while

the grammar books were for the use of the boys in the almonry, these other books were "to be lent to boys apt for school learning, *when they have left the almonry*, due security being given for their return". So that the very words cited to show that this school was something more than a grammar school prove the exact opposite; and this very will cited to show that the school in question was St. Paul's cathedral grammar school shows that it was a distinct foundation and intended only for the eight choir-boys in the almonry. That these eight boys, afterwards increased to ten, were the choir-boys, is shown by the fact that, in 1315, Bishop Richard of Newport gave to this very William of Tolleshunt, almoner, one of his executors, and to the almoner for the time being, a house near St. Paul's, "for the support of one or two of the almonry boys for two years after they have changed their voices." In lists of payments at obits and on anniversaries, the boys are sometimes called the almonry boys, sometimes the choristers. Mr. Lupton in this matter has been misled by a learned lady, Miss Hackett, who devoted herself in the first quarter of the nineteenth century to the interests of the choir-boys of St. Paul's, who then were left without any proper schooling or care at all. She, with great energy, routed out all she could find in the records of St. Paul's, and succeeded in establishing in the Court of Chancery the claims of the choir-boys on the revenues of the almonry. But her zeal outran her discretion, as whenever she saw anything about a school, or schoolboys, she at once attributed it to the choir school and choir-boys. She attacked the chancellor as well as the almoner, on the ground that the St. Paul's grammar school was for the choir-boys. In this she failed, being, of course, hopelessly wrong. But she did a great deal of harm to the cathedral grammar schools in general by imbuing people with the notion that they were mere choir schools. Mr. Lupton has followed her into other mistakes. Thus he makes the grammar school to have been "in Sharmoveres [now Sermon] Lane". Sharmoveres is a name of naught. It is simply a misreading of "Sarmoners", *i.e.* Sermoners' Lane, from a house which is said, in a document of Edward I.'s reign, to have belonged to "Adam le Sermoner". Sermon Lane is the modern shortening. What Mr. Lupton calls the grammar school was not a school, but the house above mentioned, bequeathed to the almonry. Sermon Lane is on the south side of St. Paul's, about the middle of the church. The grammar school was, as we have seen, right at the east end in the churchyard, and quite close to the church; the almonry itself was north of the church.

From 1345, the date of the almonry register, in the absence of cathedral documents, we do not hear of the grammar school again specifically until 1393. In that year a petition was presented to the king in Parliament by the Archbishop of Canterbury, the Bishop of London, the Dean of St. Martin's-le-Grand,

and the Chancellor of St. Paul's, to assert the privileges of the three old schools, both in London and the suburbs, and to put down

certain strangers feigning themselves Masters of Grammar, not sufficiently learned in that faculty, who against law and custom hold general Schools of Grammar, in deceit and fraud of children, to the great prejudice of your lieges and of the jurisdiction of Holy Church.

They say that the three masters of the schools of St. Paul's, of the Arches, and St. Martin's, "had proceeded against the said strange masters in Court Christian, who had gone to the secular courts for an inhibition." They ask, therefore, for letters under the privy seal directed to the mayor and aldermen to command them, that

as well in consideration of the king's interest in the case by reason of his Free Chapel (St. Martin's-le-Grand) as of the prejudice to the archbishop, bishop, and others before mentioned, they do not intermeddle, nor attempt to stay the proceedings in the ecclesiastical court.

It would appear that there was need in London for more schools than the three privileged ones, as half a century later, in 1447, a petition was presented to Parliament by the parsons of four London churches: Allhallows the Great; St. Andrew's, Holborn; St. Peter's, Cornhill; and St. Mary's, Colechurch (the parson of whom was also Master of the Hospital of St. Thomas of Acon, now the Mercers' Hall) for leave to establish permanent grammar schools in their respective parishes, under the patronage and government of the parson for the time being. The preamble to their petition is extremely interesting, both as demonstrating beyond all doubt that St. Paul's School was not a mere choir-boys' school, and also as showing how widespread was, or had been, the provision for secondary education. They refer to

the great number of grammar schools that some time were in divers parts of this realm, besides those that were in London, and how few be in these days, and the great hurt that is caused of this, not only in the spiritual part of the Church, where oftentimes it appeareth too openly in some persons with great shame, but also in the temporal part, to whom also it is full expedient to have competent knowledge for many causes.

They then proceed

Forasmuch as to the City of London is the common concourse of this land, wherein is great multitude of young people, not only born and brought forth in the same city, but also of many other parts of this land, some for lack of schoolmasters in their own country for to be informed of grammar there, and some for the great alms of lords, merchants, and other, the which is in London more plenteously done than in many other places of this realm to such poor creatures as never should have been brought to so great virtue and cunning as they have, had it not been by means of the alms aforesaid. . . . Wherefore it were expedient that in London were a sufficient number of schools and good informers

in grammar, and not for the singular avail of two or three persons grievously to hurt the multitude of young people. . . . For where there is great number of learners and few teachers, and all the learners be compelled to go to the same few teachers, the masters wax rich in money and the learners poor in cunning, as experience openly sheweth, against all virtue and order of the public weal.

After this powerful attack on the system of monopoly, the petitioners got their bill, but in the very modified form that the schools were to be established "by the advice of the Ordinary or otherwise of the Archbishop of Canterbury for the time being". This private Act is said to have been the origin of the Mercers' School. It is extremely doubtful how much was done under the Act. A year before we find an ordinance by the Archbishop of Canterbury and the bishop, who was the ordinary for most of London, repeating the complaint of 1393, that

whereas many and divers persons not adequately learned in the art of grammar have presumed to keep common grammar schools in the City, thereby wickedly defrauding some boys, and their friends who maintain them at school.

They accordingly ordered that

there shall be five grammar schools only and no more in the said City, namely, one in St. Paul's churchyard, another in the church of St. Martin-le-Grand, a third in the church of Blessed Mary of the Arches, a fourth in the church of St. Dunstan's in the East, and a fifth in St. Anthony's Hospital.

These ordinances were confirmed by letters patent of the King, 6th May, 24 Henry VI., A.D. 1446. There is considerable doubt whether even the Mercers' School was established before 1540, and no evidence has been found of schools at All Saints', St. Andrew's, or St. Peter's, Cornhill. The archbishop and bishop probably nipped them in the bud. Half a century of struggle therefore resulted only in the addition of two to the number of the authorized grammar schools, and neither of those in the churches of the petitioners of 1447. St. Paul's continued to flourish. James Garnon, master of St. Paul's School, is mentioned as taking his degree in grammar at Oxford in 1449. An epigram by the "Schole-mayster at Paules" on Richard III.'s proclamation on the beheading of Hastings in 1483, is reported by Holinshed:

Here is a gay goodlie cast
Foul cast away for haste.

We now come to the Colet era, round which has gathered a cloud of confusion and error. In the Rev. R. B. Gardiner's *Register of St. Paul's School* it is written:

About the close of the reign of Henry VII. John Colet, Dean of St. Paul's, . . . commenced the work of educational reform in England by establishing a school in London,

which though originally founded in honour of "Christ Jesu *in puericia* and of his blessyd Mother Mary", soon became known (probably from the situation of its buildings) as St. Paul's School. Colet during his travels abroad had perceived the importance of the revival of learning and desired to equip the children of his own country to take their place by the side of the learned men of other nations.

Then follows a collection of dates, called "Fasti of St. Paul's School".

1508. The School was begun according to Alexander Nowel, and Polydore Virgil mentions its foundation at the end of his account of the reign of Henry VII.

1509. The School was begun according to Grafton and George Lily.

1510. The School was begun according to Holinshed and Cooper.

All this doubt about the beginning of the school is unnecessary, and the account of the origin of its name is as erroneous as the notion that with it Colet started any new era of education. In the Mercers' Records, from which Mr. Gardiner freely quotes, and for access to which some years ago I was indebted to Lord Selborne and Mr. (now Sir) John Watney, the whole story is told by Colet himself in the introduction to a book he had made containing copies of all the documents relating to the foundation of the school. After saying that he had inherited wealth from his father, and wished to spend it for the best purposes,

seeing in my judgment nothing better in this world nor more commodious to Christ's Church, that is to say, all Christendom, and for the reparation of the same now sorrowfully decayed both in good manners and clean literature than good institution and bringing up of children in wisdom and good living in good letters and laudable conversation, in the year A.D. 1508 began to edify in the East end of the churchyard of Paul's a school-house of stone for children to be taught, free, to the number of 153 . . . and also builded a mansion adjoining to the said school at the north side for the masters to dwell in. And in A.D. 1512 full accomplished and finished the same in every point.

A minute of the Court of the Mercers, on 17th August, 1510, copied in the book, gives even greater exactness. "The dean and chapter," it says, "had sealed a deed of estate by the which they (the Mercers) should receive possession of the ground whereupon the school-house *is* builded and the schoolmaster's house *shall* be builded." So that the school-house was begun in 1508, finished by August, 1510; and the master's house begun after that date and finished by 1512. The school was built before the legal proceedings connected with the foundation were begun. These began on 9th April, 1510, when the Mercers were told that Colet was "disposed for the foundation of his school to mortify", *i.e.* vest in the company under a licence in mortmain, "certain lands which he would that the company should have, if they would be bound to maintain the said school". After several interviews to satisfy the company that their pockets ran no risk, they agreed to take the governorship. On 6th June, 1510 (wrongly given by Mr. Gardiner as 1511), letters patent were issued by the Crown granting the

necessary licence in mortmain to the Mercers to take and hold lands for the use of the school and masters, of the value of £53 a year. On 27th July, 1510, the first legal documents were executed. They were just what we should expect if Colet was taking over and re-endowing St. Paul's cathedral grammar school, and not at all what we should expect if his was a totally new departure, an original creation, the establishment not only of a new school, but of a new system of education, where none had existed before. First came the consent of the chancellor of St. Paul's to the statutes and orders made and to be made by Colet for the school he has "erected in the churchyard", and a confirmation of the same by the dean and chapter. This, however, might be said to have been given only because of the general powers of chancellor and chapter over all schools in London. The same cannot be said of another document executed the same day by the chapter. This document begins with a recital of great historical interest from more points than one :

By ancient, lawful and laudable prescription, as well as by the statutes and laudable customs of the said cathedral church, the master of the grammar school of the said church of St. Paul's, London, for the time being, has always been a member of our body, and had the right of entry to the choir of the said church during divine service, and of a seat in a fitting stall in the accustomed place there, whether he is a priest or a layman, so long as he appears in a proper surplice.

A most interesting fact is that at St. Paul's, as at St. Peter's, York, and at Winchester College, it was in the fifteenth and sixteenth centuries by no means uncommon to have a lay head-master. The document seems almost to have been concocted for the purpose of correcting erroneous ideas about the school, as it then goes on carefully by another recital to distinguish the grammar school-master from the almonry schoolmaster :

And whereas both in his own person and for his own house or inn, he has always enjoyed the same liberty as the master of the house of the alms boys,

i.e. the choristers. The chapter then proceed :

Therefore we *take into our body and that of our church*, Master William Lyly, the first master of the new school of St. Paul's, and his successors in office, and that he and his successors may exercise their office quietly in the premises (the stall and services) and be diligent in the teaching of the boys . . . we grant that the master, the school, and the house may be free from all parochial exactions, and enjoy the same privilege as the alms boys' house of the said church enjoys, and that in that house they need recognize no curate except the cardinals of St. Paul's, from whom they ought to receive all sacraments and sacramentals.

Curate, of course, means a *curé*, a person with cure of souls ; and the cardinals were the senior minor canons.

In consideration of this grant the Mercers' Company was to pay the chapter £3 a year. Nothing surely could be more conclusive than this. The dean and chapter recite the old customs applicable to the cathedral grammar school-master, and apply them to what they and Colet himself habitually call "the New School of Paul's".

Nor is that all. Six months afterwards, 28th March, 1511, the actual site and buildings were assured to three members of the company by two separate deeds. One of these granted the piece of land on which "is now built the house or grammar school of stone, with a house for the master", while the other granted "the grammar house or messuage, *lately* called St. Paul's School, near St. Austin's Gate, and the four shops underneath".

Thus it appears that the old cathedral grammar school was carried on in the old building right up to the time when Colet's new school was built close by it, and then the old school, "stock, lock, and barrel," with its buildings, rights and privileges, and belongings, not excepting its name, was transferred to the new school.

Here, again, the thread of the narrative must be broken to point out that Mr. Lupton and Mr. Gardiner represented Colet as having acquired the old school "by gift grant and confirmation from three members of the Mercers' Company named Osyer, Digby, and Rice", as if it had belonged to them, and was bought by Colet from them. The mere fact that there were three of them puts any lawyer on inquiry, whether they were not trustees. Such, Hosier (to give him back his aspirate) and the others were. In the two deeds mentioned they were the grantees from the dean and chapter, because Colet could not very well as dean convey to himself as Colet. They reconveyed the premises by a deed of 10th June, 1512, to Colet. He made his will 10th June, 1514, granting the lands to the company for the school, which will (he being a citizen of London) was duly enrolled in the Hustings Court of the City. On the same day in 1511 that the chapter granted the old school, the chancellor of St. Paul's, William Lichfield, released to the same three Mercer trustees all his interest in the "grammar house or messuage, lately called Poulis Scole", the last two words being in English. A few days afterwards, 5th April, the chancellor in another document informed all whom it might concern that

though during his term of office he had made all endeavours possible to learn what right he had to the four shops, over which, namely in the long chamber built over it, the old grammar school of St. Paul's, London, was held, or in the school itself, he could never ascertain that the chancellor had any right, or received any rent from them, but that they seemed to belong to the dean and chapter ;

and therefore he had voluntarily made the release of the 28th March and con-

sented to the dean and chapter's grant of them "to the use of the New School in the churchyard of St. Paul's lately built". This was natural enough. Though the chancellor had the appointment of the master and control of the school, the school-house was provided by the chapter. As the chancellor did not get the profits of the shops under the school, he had also ceased to be liable for the repairs of it, as provided by the ancient statutes. Indeed, this is expressly stated by Colet to have been the case in the document next mentioned. It was the tendency in all cathedral and collegiate churches, owing to the increasing non-residence of the chancellors, for their duties in regard to the grammar school to be neglected and their rights forgotten. The then chancellor of St. Paul's did not even perform his own proper duty of lecturing on theology, for which the chancellorship had been specially endowed in 1309. He was non-resident, and when he was called to account by Bishop Fitz-James, *c.* 1507, said that the statute required "continuous residence and lectures" which was impossible, therefore he did not do it at all; to meet which plea the bishop solemnly altered the statute so as to provide that he should lecture three days a week, with two long vacations, one in the autumn, the other in the spring. The London chancellor was not singular in his neglect. The same thing happened at York. But the grammar schools could not be thus quietly dropped, and, in default of the chancellor, the appointment of the master and the care of the school devolved on the chapter, that is, the canons residentiary. It is clear that St. Paul's School had not ceased. For Colet applied to "the most Holy Father the Pope" for a bull confirming the exemption of his school from the jurisdiction of the chancellor of St. Paul's. His application described how "at his own proper cost he had caused to be built a certain school in the City of London in the place or churchyard of the cathedral church of London, a spot indeed which was the chief and most frequented, and as it were the very eye, of the City, where already there was a school, plainly of no importance, now rebuilt from the foundation in most beautiful stone-work and endowed". Now if the school was not going on at all, Colet would have said so, instead of going out of his way to sniff at it as a school of no importance. The sniff must be taken with all due allowance for the fact that the sniffer wanted to "reform" it. The better is the enemy of the good. Colet proves the existence of the cathedral grammar school, and that it was doing some good, by the very allegation that it was not doing all the good it might. After his endowment it was merged in the new school and ceased to exist.

As to the name of the school there is no adequate reason for thinking that it was ever intended to be anything but St. Paul's School or "the new School of St. Paul's". The notion that it was intended to be called the Jesus School, like Pursglove's foundations at Guisborough in Yorkshire and Tideswell

in Derbyshire, or the "Boy Jesus" School, or something of that kind has no solid foundation. The deeds invariably speak of the school as Paul's School, or the School in St. Paul's Churchyard (which was, by the way, the description of the old school in the ordinance of 1446), generally with the epithet of New, and there is little doubt that Colet's idea of its name was "the New School of Paul's". The insistence on its novelty in its title, like the title given by Henry VIII. to Warwick School, after its re-foundation on the dissolution of the collegiate church, of the "King's New School of Warwick", at once suggests that it was not new. Similarly the revised statutes of the school, made eight years after the deeds, in 1518, were signed with his own hand "Joannes Colet, fundator nove schole", while the first item in the schedule of property given in the statutes was "First, of the olde scole". The "old" school and the "new" school. Of what? Not of Jesus but of "Poule's". So in the copious minutes of the Mercers' Company relating to the founding of the school it is commonly called "the Scole of Poules", sometimes "the Scole at Poules" and "the Scole in Poules Churcheyarde", and on the day in 1512 when Colet first produced the statutes of the school, "the newe Scole at Poules". Paul's is always part of the title, Jesus never. The only colour for the suggestion that the school was ever called, or intended to be called, by the name of the Jesus School is that, in these statutes, Colet says that it was "founded in honour of Christ Jesu in His boyhood and of His Blessed Mother Mary". But no one has ever suggested that Winchester College was intended to be called Trinity College, or the Jesus College, or even Swithun College, because William of Wykeham in his foundation charter says he founded it "in the name of the highest and undivided Trinity, Father, Son, and Holy Ghost, to the praise, glory, and honour of the name of the Crucified, the most glorious Virgin His Mother, and the patrons of the cathedral church SS. Peter, Paul, Birinus, Eddi, Swithun, and Æthelwold".

It is true that on a tablet hung near Colet's tomb in St. Paul's were some verses which contained the line:

Quique scholam struxit celebrem cognomine Jesu,

"who built a famous school in (or with) the name of Jesus." It is said, but it does not appear on what authority, that these lines were by Lily. The fact that *scholam* is spelt with an h is strongly against this. Colet always spells it without. Anyhow, a poetic epitaph by an unknown hand, and of unknown date, near the tomb, is poor evidence compared with the prose inscription *on* the tomb, which said that Colet built and endowed, at his own sole charge, "scolam Paulinam", while in English, too, was inscribed on it "the only founder of Powle's School".

Indeed, if a new name had been given to this new-old school, it would rather have been that given to Winchester and Eton, St. Mary's School. For other lands, which it is said by some are now held by the Mercers instead of the school, were acquired by Colet and given to the Mercers in 1516, under separate letters patent, dated in 1512, for "the chantry of the Blessed Mary, patroness of boys", for a chaplain celebrating in the chapel of St. Mary, St. John the Baptist, and St. John the Evangelist, on the south side of the school, to pray, according to the usual formula, for the souls of the king, the founder, his friends and benefactors, but with the very unusual addition "for the increase of good literature, virtue and grace in the boys of the said school".

But it is clear that the school was called after neither the Mother nor the Son. It was called from the first, and was intended to be called St. Paul's School, or, in the less ceremonious phrase of the day, "the School of Poule's."

If Colet's school was not new in point of foundation, neither was it new in point of government or of education. A good deal has been made of his vesting the property and management in the Mercers, on the ground that "while there was no absolute certainty in human affairs, he found less corruption in a body of married laymen, like the Mercers, than in any other order or degree of mankind". There was force, no doubt, in this very strong expression in favour of laymen, coming from a priest and dignitary of the Church. But there was no novelty in the selection of married laymen or of a City company as trustees and governors of a school. If Holinshed is to be trusted, Sir Stephen Jenyns, Lord Mayor in 1508-9, had in 1508 built the grammar school at Wolverhampton, of which he made his company, the Merchant Taylors', governors; and it is more likely that his example inspired Colet, who only began his school in 1508, than *vice versa*. But even if that be not so, Jenyns was only imitating another Merchant Taylor Lord Mayor, in whose year Jenyns had been sheriff, Sir John Percyvale, who in 1502-3 had founded Macclesfield grammar school with local laymen as its governors and trustees, while Sir Bartholomew Read had founded Cromer grammar school in 1505 and made the Goldsmiths' Company its governors. The Goldsmiths had been made governors of Stockport grammar school, founded by another Lord Mayor, Sir Edmund Shaw, in 1487-8. And in truth there was an even earlier example in Colet's own company, John Abbott, citizen and mercer, having 19th June, 1443, given lands in London to the "Mistere" of the Mercers, making them trustees for a free school, a master to teach *libere et quiete* at Farnyngho, now Farthinghoe, in Northamptonshire. So that Colet in making a City company the governors of St. Paul's School was so far from making a new departure or creating a precedent that he was following one more than sixty years old. In selecting laymen as

trustees he was following a much older precedent, as guilds outside London had been the trustees of schools at least half a century earlier.

Nor was there any great novelty about the education to be given in the school. So far as Latin is concerned, though Colet talks a great deal about "the very Roman eloquence" and "true Latin speech, all barbarity, all corruption, all Latin adulterate being expelled", yet when he descends to details he only produces a list of authors, Prudentius, Proba, Sedulius, Juvenius, and Baptista Mantuanus, whose names are not known to classical scholars now, who are very "low" Latin indeed, and, with the exception of the last, are precisely the same as were enumerated by Alcuin at York in the eighth century, and by Vincent of Beauvais, a Dominican friar, in his treatise on education, written in the middle of the thirteenth century. Mantuanus was a friar of the fifteenth century who wrote eclogues in imitation of the great Mantuan Virgil, which were still used as a school-book in Shakespeare's day, and he makes Sir Hugh Evans quote it.

Colet's innovations were really two. First, a "catechizon", or catechism, in English, of Colet's own devising, which would a few years afterwards have been regarded as an odd mixture of heresy and orthodoxy, whether looked at from a Catholic or a Protestant point of view. The other innovation was the introduction of Greek by statute into the school as one of the possible requirements of the master, "lernyd in laten and also in greke yf suyche may be gotten". But the novelty was in the statute, not in Greek being taught.

The first English Grecist was William Grocyn, scholar of Winchester in 1463, Fellow of New College in 1467, where he sat under Cornelio Vitelli, an Italian lecturer, introduced by Warden Chandler. He himself after a sojourn abroad became the first English teacher of Greek in Oxford, in 1491. The younger generation of Wykehamists, Archbishop Warham, Nicholas Harpsfield, and other eminent Greek scholars and advancers of Greek, almost certainly learnt their Greek at Winchester. It is practically certain that under William Horman, a scholar of Winchester in 1468, Head Master of Eton 1485 to 1494, of Winchester 1494 to 1502, Greek was taught there. His *Vulgaria*, a sort of *Delectus*, published in 1519, but professedly reproducing school exercises given when he was head master, has many Greek phrases and references to Greek, even to the performance of a Greek play. Sir Thomas Pope, founder of Trinity College, Oxford, writing in 1556, says that, "when he was a young scolar at Eton, the Greek tongue was growing apace, the study of which is now much decayed." William Rightwise, or Righteous, the first surmaster of Colet's School, was an Etonian a little before Pope. As I have ventured to say in the *History of Winchester College*, "There can hardly be a doubt that the school of Grocyn, of Chandler, and of Warham, officially visited by the two latter, took the lead in the introduction of Greek into the curriculum

of schools," and was very soon followed by Eton. There was no need of a new school to introduce Greek to grammar schools any more than there was need of a new college to introduce it to the Universities. Greek had, as we have seen, already been studied at New College, when Fox, Visitor of it and of Winchester College, introduced it in his statutes at Corpus, his new college, in 1527. It could equally easily have been introduced into the old school of Paul's if Colet had so chosen. Was it provided for in the statutes of 1512, or only in those of 1518?

The introduction of Greek into the statutes of a school, and that school attached to a cathedral church, marks an era no doubt, seeing that Grecists at first were attacked as heretics; just as the introduction by name of the subject of Natural Science into the scheme for Bradford grammar school by the Endowed Schools Commissioners in 1870 marked an era, seeing that geology and natural selection had both in turn been branded as subversive of religion, and men of science as atheists. But though the Endowed Schools Commissioners marked a new era they did not start one. Before 1869 science had already been taught at Winchester, Eton, and Harrow, without the intervention of the State. So Colet, by his statutes, marked a new era by contemplating Greek as a school subject; he did not invent it as a school subject.

The fame of Colet's new endowment was due partly to his own fame and position, partly to that of the school which he re-endowed, but still more to the magnificence of the re-endowment. It is clear from the history we have traced that, before Colet, St. Paul's was a fee school. Colet made it a free school; and free not for 25 boys, as the Mercers' School was in 1541, nor for 70 boys only, like Winchester, but for no less than 153. The endowment was not so large as that of Winchester and Eton, and the Paulines were not lodged, boarded, and clothed, as well as taught, as were the young Wykehamists and Etonians. Nor was the school larger, as the Commoners at Winchester and Oppidans at Eton, partly boarders, partly day-boys, have also to be reckoned. But to the London citizen of those days the enlarged school, alike in buildings and constitution, was a foundation of the first rank.

None of the things, then, that Colet did in his foundation was novel in itself, neither the lay master, nor the lay governors, nor the freedom from fees, nor the magnitude of the endowment, nor the curriculum. But, taken altogether, founded with much flourishing of trumpets in the great city of London hard by the great cathedral church of St. Paul, and carried out in the cathedral grammar school itself, thus, after 400 years and more, significantly transferred from ecclesiastical to lay hands by the chief ecclesiastic of the cathedral church himself, the school made a great sensation, and may have seemed to the world at large a new departure.

The new school, however, was only the old school enlarged and reformed; or, as we should say, placed under a new scheme. So the present St. Paul's School, instead of being a mere mushroom of 400 years' growth, can establish an antiquity of at least 400 years more, and may reasonably claim a continuous existence as long as that of English London and its minster, from the time that Alfred expelled the Danes.

APPENDIX

GRANT OF MASTER DURAND'S STATION AND OF THE LIBRARIANSHIP TO THE SCHOOLMASTER, EX OFFICIO.

DE MAGISTRO SCOLARUM ET DE CANCELLARIO vij LITTERE, j.¹

[St. Paul's Mun. Lib. A.² f. xxviiij.]

c. 1111.

R. Dei gracia Londoniensis ecclesie minister, W. Decano totique fratrum conventui, Salutem et paternam benedictionem.

Noveritis filii mei karissimi vestra dileccio me Hugoni, Magistro Scholarum, ex Magisterii dignitate, suisque eiusdem dignitatis successoribus stabilisse firmiter Magistri Durandi stacionem in angulo turris, videlicet, ubi Decanus Willelmus meo illum collocavit imperio inter Robertum de Auco et Odonem.

Concedo eciam illi scholarumque privilegio nostre ecclesie omnium librorum custodiam.

Volo igitur, et tibi, Decane, precipio ut illos omnes in conspectu fratrum in quodam cyrographo ascriptos, cuius scilicet altera pars in thesauro custodiatur, alteram sibi retineat, ei commendes, et de hac custodia eum seias, diligenter et sub anathemate investigans si aliqui librorum tam secularium quam divinorum extra missi per aliquem fuerint; quod si fuerint, sub obediencia precipio ut retromittantur.

Fac eciam illi habere claves armariorum juxta altare, que ad illud opus fieri imperavi.

Marginal note. NOTA. Magistrum Scholarum debere custodiam librorum almariis habere.

APPOINTMENT OF CANON HENRY TO THE MASTERSHIP OF ST. PAUL'S SCHOOL.

DE COLLACIONE SCOLARUM.³

[St. Paul's Mun. Original (plate XX, A) in Press A. Box 25A, no. 1368, and copy in Lib. A. f. xxviiij (cf. Knight's *Life of Colet*, ed. 1724, p. 117).]

c. 1127.

Ricardus Dei gracia Londoniensis episcopus W. Decano totique fratrum conventui, et W. de Occhendonapapifero suo cunctisque suis hominibus, salutem et in Christo benedictionem.

Notum vobis facio, karissimi, me concessisse Henrico canonico meo, nutrito magistri Hugonis, scholas Sancti Pauli ita honorifice sicut unquam melius et honorabilius illas ecclesia habuit, et terram de atrio quam⁴ predictus Hugo ad se hospitandum sibi inclusit; et pratum quod eidem Hugoni in Foleham concesseram, scilicet .iiij. acras, scilicet quicquid est in illo loco a grava usque ad Tamisiam singulis annis pro xij denariis de recognitione in festo Sancti Michaelis, et in elemosina decimam de Ilingis⁵ et decimam de Madaleia⁶.

¹ Marginal heading at the top of the page.

² Liber A, called *pilosus* from its hairy deerskin cover, is a cartulary copied from the original documents in 1241.

³ Marginal heading.

⁴ Wrongly *quod* in Knight's copy.

⁵ Lib. A has "Ylingis" (Ealing).

⁶ Lib. A has Madeleya.

Testibus Willelmo de Wintonia,¹ et Willelmo de Occhendonā dapifero, et Hugone de Cancerisio. Valet.

Marginal note in Lib. A. NOTA.—Magistrum scholarum debere habere iiij acras prati apud Fulham et decimam de Yllinges et de Madeleya.

THE ACTING BISHOP OF LONDON ENFORCES THE MONOPOLY OF ST. PAUL'S SCHOOL, EXCEPT FOR THE SCHOOLS OF ST. MARY-LE-BOW AND ST. MARTIN-LE-GRAND (plate XX, B).

(Endorsed in a thirteenth-century hand: DE CANCELLARIO, and in a later sixteenth-century hand: "Excommunicacio contra omnes qui legunt in civitate preter licenciam magistri scholarum.")

[St. Paul's Mun. Press A. Box 60, no. 48, and Lib. A. f. xxix.]

1138-40.

H[enricus] Dei gracia Wintoniensis ecclesie minister capitulo Sancti Pauli et Willelmo archidiacono et ministris suis Salutem.

Precipio vobis per obedientiam, ut, trinam vocationem², sentenciam anatematis³ in eos proferatis qui sine licencia Henrici Magistri scholarum in tota civitate Lundon legere presumserint⁴ preter eos qui scholas Sancte Marie de Archa et Sancti Martini regunt. Teste Magistro Ilario apud Wintoniam.

Marginal note in Lib. A. Nota quod scole non sunt tenende London nisi apud Beatum Paulum exceptis scholis Beate Marie de Arcubus et Sancti Martini Magni.

[Chronicle of Ralph de Diceto (Rolls Series), i. 252.]

1138. Dominus Papa curam ecclesie Lundoniensis Henrico commisit Wintoniensi Episcopo cum gracia Regis.

1140. Imperatrix a Lundoniensibus recipitur in Dominam, per quam Robertus de sigillo factus est Lundoniensis episcopus.

LONDON SCHOOLS IN THOMAS À BECKET'S BOYHOOD.

[*Materials for the History of Thomas Becket, Archbishop of Canterbury* (Rolls Series, 67), vol. iii. William Fitz-Stephen's *Vita Sancti Thomae*.⁵]

p. 3 (7). Sunt etiam circa Londoniam ab aquilone suburbani fontes praecipui, aqua dulci, salubri, perspicua, et per claros rivo trepidante lapillos; inter quos Fons Sacer, Fons Clericorum, Fons sancti Clementis, nominationes habentur, et adeuntur celebriore accessu et majore frequentia scholarium, et urbanae juventutis in serotinis aestivis ad auram exeuntis. Urbs sane bona, si bonum habeat dominum.

p. 4 (9). In Londonia tres principales ecclesiae scholas celebres habent de privilegio et antiqua dignitate.⁶ Plerumque tamen favore personali alicujus notorum secundum philosophiam plures ibi scholae admittuntur. Diebus festis ad ecclesias festivas magistri conventus celebrant. Disputant scholares, quidam demonstrative, dialectice alii; hi rotant enthymemata, hi perfectis melius utuntur syllogismis. Quidam ad ostentationem exercentur disputatione,

¹ Lib. A has *et aliis* for the other names, and omits *Valet*. The seal, with figure of the bishop with crozier in the left hand, is attached by parchment thongs.

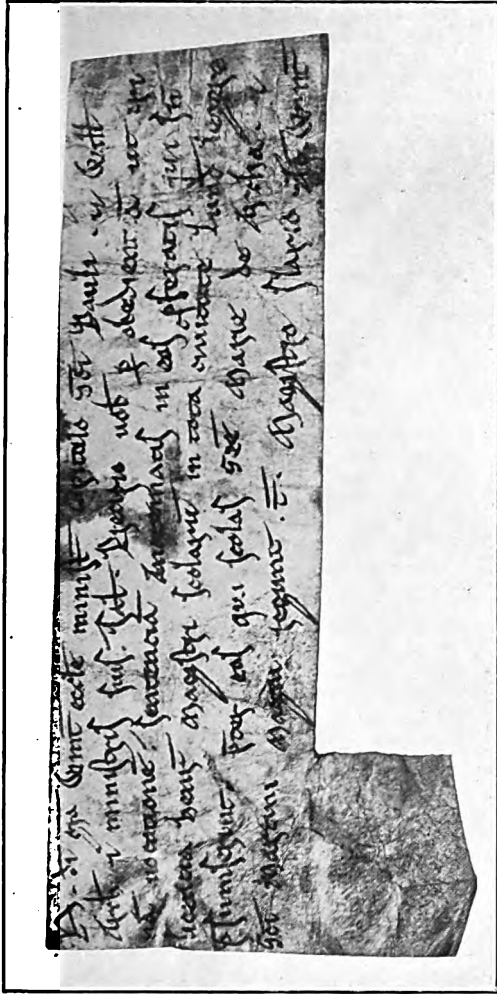
² post trinam vocationem (Lib. A).

³ anatematis (Lib. A).

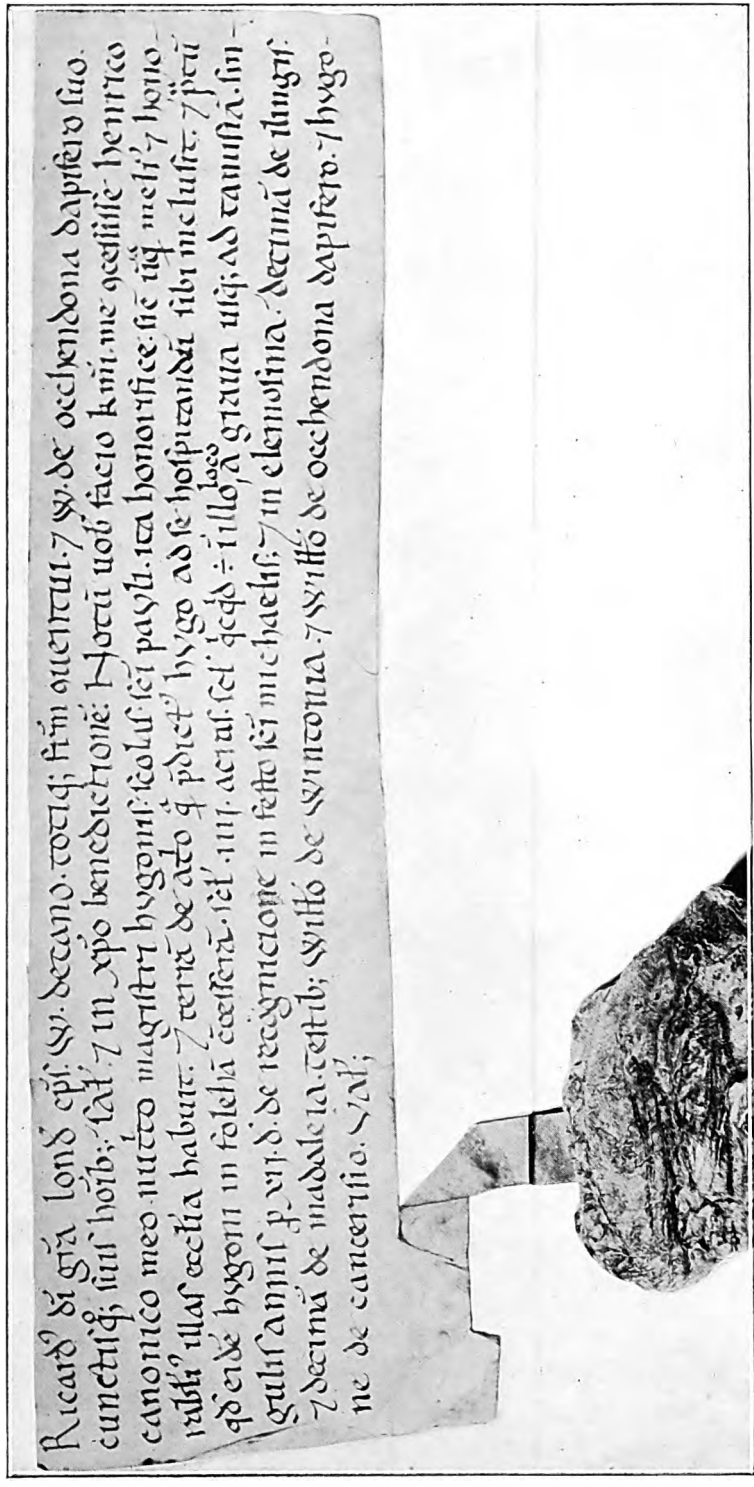
⁴ presumserint (Lib. A).

⁵ The spelling is given as in that edition, not as in the original.

⁶ Videlicet, sedes episcopalis ecclesia S. Pauli, ecclesia S. Trinitatis, et ecclesia S. Martini, printed in *Munimenta Gildhall*. Lib. Custumarum, ii. 5. The second is a mistake; it was St. Mary-le-Bow.



B



A

A. GRANT BY RICHARD DE BELMEIS, BISHOP OF LONDON, c. 1111, TO CANON HENRY, OF ST. PAUL'S SCHOOL, ETC.
 B. DECREE OF HENRY, BISHOP OF WINCHESTER, c. 1149, TO ENFORCE THE LEGAL MONOPOLY OF ST. PAUL'S SCHOOL
Published by the Society of Antiquaries of London, 1910

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quae est inter colluctantes¹; alii ad veritatem, ea quae est perfectionis gratia. Sophistae simulatores agmine et inundatione verborum beati judicantur; alii paralogizant. Oratores aliqui quandoque orationibus rhetoricis aliquid dicunt apposite ad persuadendum, curantes artis praecepta servare, et ex contingentibus nihil omittere. Pueri diversarum scholarum versibus inter se conrixantur; aut de principiis artis grammaticae, vel regulis praeteritorum vel supinorum, contendunt. Sunt alii qui in epigrammatibus, rhythmis et metris, utuntur vetere illa triviali dicacitate; licentia Fescennina socios suppressis nominibus liberius lacerant; loedorias jaculantur et scommata; salibus Socraticis sociorum, vel forte majorum, vitia tangunt; vel mordacius dente rodunt Theonino audacibus dithyrambis. Auditores,

multum ridere parati,
Ingeminant tremulos naso crispante cachiunos.

p. 9 (13). Praeterea quotannis, die quae dicitur Carnilevaria, ut a ludis puerorum Londoniae incipiamus (omnes enim pueri fuimus), scholarum singuli pueri suos apportant magistro suo gallos gallinaceos pugnaces, et totum illud antemeridianum datur ludo puerorum vacantium spectare in scholis suorum pugnas gallorum. Post prandium vadit in suburbanam planitiem omnis juvenus urbis ad lusum pilae celebrem. Singulorum studiorum scholares suam habent pilam; singulorum officiorum urbis exercitores suam fere singuli. Majores natu, patres, et divites urbis, in equis spectatum veniunt certamina juniorum, et modo suo juvenantur cum juvenibus; et excitari videtur in eis motus calor naturalis contemplatione tanti motus et participatione gaudiorum adolescentiae liberioris.

p. 14. [Thomas à Becket.] Puerum eum pater in religiosa domo canonicorum Meritoniae priori Roberto aliquandiu nutriendum commendaverat. . . Annis igitur infantiae, pueritiae et pubertatis simpliciter domi paternae et in scholis urbis decursis, Thomas adolescens factus studuit Parisius.

THE SCHOOL BOYS ARE GIVEN 3D. FOR CHERRIES.

[St. Paul's Mun. Liber L. f. 20, printed in Hist. MSS. Com. Rep. ix. App. 62.]

c. 1142.²

Notum sit presentibus et futuris quod canonici Beati Pauli Lundoniensis emerunt acram terre iuxta Sanctam Margaretam de qua tenentes v solidos prius habere solebant, pro xxvj marcis, quas dederunt Leuestan filio Orgari et Ailwino et Roberto filiis Leuestani et ceteris de eorum cognatione ut ipsa acra tota Beati Pauli et canonicorum esset soluta et quieta imperpetuum.

Sed quoniam de eadem acra orta est calumpnia ab eisdem et eciam a quadam sorore supradicti Leuestani, dixerunt enim se nihil habuisse amplius quam xv marcas de xxvj supradictis, redemerunt eam ab eisdem vij libris et ix solidis et xj denariis, ita videlicet quod super eandem acram recepit inde Leuestanus viij marcas, et Robertus filius Leuestani j marcam, et Ailwinus frater eius j marcam et dimidiam, et Gislebertus Prutfot vicecomes ij solidos et Azo aldermannus ij solidos, et soror Leuestani ij solidos, que cum aliis parentibus clamavit Sancto Paulo et canonicis totam acram solutam et quietam, Hugo filius Ulgari iij solidos, Vitalis clericus vicecomitis iiij denarios, bedellus illius Warde iiij denarios, pueri scolarum qui testes huius empconis interfuerunt iij denarios ad cerasa habuerunt. . . .

¹ This should be *collectantes*, as printed in Pegg's edition, *i.e.* as they do at collections.

² The date is fixed by the first witnesses being "Radulphus Decanus, Ricardus de Belmeis". Ralph of Langford occurs as dean in 1142, and Richard was Archdeacon of Middlesex in or about 1138. Le Neve's *Fasti*, ii. 307, 325. Magister Henricus, *i.e.* Schoolmaster Henry, also appears as a witness, next after Robertus de Auco.

FURTHER ENDOWMENT OF SCHOOLMASTER.

[St. Paul's Mun. Lib. A. f. xxix.]

NOTA. De decimis magistro scholarum Sancti Pauli concessis, nunc cancellario.

c. 1198.

Ricardus¹ Dei Gracia Londoniensis (*sic*) Episcopus Omnibus sancte matris ecclesie filiis ad quos presentes littere pervenerint Salutem in Domino.

Ea que ad honorem ecclesie Domini et ad ejus dignitatis augmentum recte disponuntur, justum est perpetua firmitate gaudere. Inde est quod nos, cum divina dispositione ad ecclesie Londoniensis regimen vocati essemus, considerantes quod magister scholarum ecclesie Beati Pauli solius fungeretur magisterii nomine, et ex ipso magisterio vel nullum vel modicum sortiretur emolumentum, in mente et proposito habuimus ut cum nobis facultas suppeditaret aliquos magisterio conferremus redditus; ex quibus ipse magister cum dignitatis nomine aliquod perciperet commodum.

Procedente itaque tempore, communicato cum viris prudentibus consilio, assensu Decani et capituli ecclesie Beati Pauli, hec que subscripta sunt ipsi magisterio assignavimus; Decimas, scilicet tocius dominici nostri de Fuleham tam de frugibus quam de aliis fructibus; et de feno, et alias minutas decimas omnes, decimas quoque assartorum et novalium que ante tempora nostra ad cultum redacta sunt; scilicet de x et una acris in Bernes, et de viginti acris in Stroda, et de xx acris in campo Dispensatorum, et de xx acris in Wargemere, et de octo acris de sarto Sagun, et de xl quinque acris et dimidia inter assartum Ricardi et vetus fossatum, et de sexaginta octo acris essartorum juxta Wormeholt et Herleston, et decimas de viginti duabus acris apud Sixtele et de duabus acris in Whitemere et de duabus acris que jacent in Hoco et de novem acris essartorum in Wormeholt et de quatuor acris essartorum juxta Wormeholt Hec autem omnia ad cultum ante tempora nostra redacta sunt.

Assignavimus eciam eidem magisterio omnes decimas nostras tam de frugibus quam de aliis fructibus et minutas de dominico nostro de Horseta, et de tota terra illa que fuit Humfridi de Marini. Assignavimus eciam sepedicto magisterio unam acram terre in Horsat ad repositionem decimarum eidem magisterio assignatarum, libere et pacifice de nobis et successoribus nostris tenendam.

Ut autem hec nostra concessio perpetuam optineat firmitatem ne tractu temporis in dubium posset devocari vel in irritum, eam presentis scripti testimonio et sigilli nostri appositione robore curavimus.

Hiis Testibus Radulpho de Diceto, ecclesie Beati Pauli Londoniensis Decano, Magistro Alardo, Archidiacono² Londiniensi, et aliis nominatis in carta.

FIRST MENTION OF ALMONRY BOYS (CHORISTERS) AND BOY-BISHOP.

[St. Paul's Mun. W. D. 9, Registrum Statutorum, part vii, chapter 6. Printed by W. Sparrow Simpson, 1873.]

CONSTITUTIONES ET STATUTA ET DECLARATIONES CONSUETUDINUM ANTIQUARUM ET APPROBATARUM EDITE TEMPORE MAGISTRI RADULPHI DE DISCETO, DECANI SANCTI PAULI.

1181-1199.

De Canonicis qui in Ecclesia Sancti Pauli London residere proponunt sic est ordinatum, quod veniat per quindenam ante festum Sancti Michaelis, vel Natalis Domini, vel Pasche, vel Nativitatis Sancti Johannis Baptiste, ad Capitulum, et in presencia Decani et Fratrum, pro-

¹ Fitz Neal, 1189-1209.² After 1197 to 1215.

testetur se velle residere, et residenciam inchoare in vigilia Sancti Michaelis proxime sequentis, vel aliorum festorum predictorum, et eam secundum consuetudinem ecclesie predictae continuare; duos clericos tunc secum habens, qui aliud beneficium vel officium in Ecclesia non habeant, et sint in sacris, vel alter in sacris, alter ad sacros aptus, et cum ipso chorum frequentent horis diurnis omnibus et nocturnis. Et cotidie pascat ad tres refecciones duos parvos Canonicos, et duos Capellanos, et quattuor Vicarios, et duos pueros elemosinarios,¹ et servientes ecclesie virgas in ea portantes, et Pulsatores campanarum qui qualibet nocte ad domum suam venient ut eum evigilent, et de matutinis muniant vel constare faciant ad portam diu pulsando ne horam illam perdat; pro qua pulsacione singulis noctibus liberatam panis et servisie et coquine habeant. Et secum ad Ecclesiam media nocte panem et cervisiam pro junioribus chorum frequentantibus deferi faciat. Et quolibet quarterio semel vel bis post matutinas junioribus gentaculum unum in domo sua faciat.

DE CENA IN OCTAVIS INNOCENCIUM.

Et secundam cenam in octavis Innocencium tenebit, episcopum cum pueris et eorum comitiva pascendo, et in recessu dona dando, et, si diu expectet adventum illorum nocte illa, ad matutinas non teneatur venire. Et si contingat de facto, quod alibi morari voluerit quam in domibus juxta ecclesiam, sicut predictum est, caret omni beneficio et emolumento Residenciariis et stagiariis debito, ratione Residencie, exceptis pitanciis parvis, que debentur presentibus in festis ecclesie et obitibus.

THE EARLIEST USE OF THE TITLE OF CHANCELLOR AT ST. PAUL'S.

[St. Paul's Mun. Press A. Box 42, No. 1521, Hist. MSS. Com. App. 1521, p. 42.]

1205.

Assignment by William, bishop of London (de S. Marie ecclesia, 1197-1221), of the new places in Chelmsford where he bought the new market.

Witnessed by Mr. John de Cancia, chancellor, and five others.

GRANT BY CHANCELLOR HENRY OF CORNHILL OF HIS HOUSE TO
THE CHANCELLORSHIP FOR HIS OBIT.

CARTA DE DOMIBUS CANCELLARII ET MARCA SOLVENDA AD OBITUM H. CORNULL.

[St. Paul's Mun. Lib. A. f. xxix. 4.]

Between 1231 and 1241.

Omnibus Christi fidelibus Henricus de Cornhull, cancellarius Londiniensis, Salutem in Domino sempiternam.

Debito conditionis humane per exitum mortis corporalis obnoxius, oraciones ecclesie et fidelium apud omnipotentis Dei clemenciam mihi spero profituras. Ea propter aream meam et domos quas in Atrio ecclesie Beati Pauli Londoniensis ad australem ecclesie partem possedeo de consensu karissimi in Christo Patris Rogeri Londoniensis episcopi et capituli ipsius ecclesie relinquo. Ita quod is qui pro tempore in officio Cancellarii et dignitate mihi successerit in ecclesia Beati Pauli domos predictas cum area possideat, et in anniversario die obitus mei singulis annis reddat unam marcam ecclesie prefate, de qua dimidiam marcam fratribus et canonicis qui presentes erunt in commemoratione defunctorum, que pro me fiet, et reliquis clericis chori dimidiam marcam eodem modo presentibus assigno.

Retineo tamen mihi dum vixero et prebendam habuero in ecclesia memorata possessionem

¹ The almonry, or hospital for the poor, was established during Ralph de Diceto's deanery by a grant of Master Henry of Northampton, the chapter annexing to it the doles of bread and pennies which, according to the ancient institution of the church, they gave in alms to the poor. The rectory of St. Pancras was also given as endowment.

et commoditatem hospicii mei, licet ad aliud officium fuero assumptus fortasse, nisi per Dominum Episcopum Londoniensem de alio hospicio eque bono et competenti in eodem atrio mihi provideatur.

In cuius rei testimonium cartam presentem sigillo nostro communivi. Hiis Testibus Galfrido, Decano Sancti Pauli, Magistris W. de Sancte Marie ecclesia et aliis.

THE CHANCELLOR'S DUTIES.

[St. Paul's Mun. W. D. 19, ff. 2a. 4.]

c. 1250.¹ CONSTITUCIO HENRICI NONDUM APPROBATA DE STATU PERSONATUUM ET CANONICORUM.

Item, in tabula scribuntur nominibus dignitatis Dominus presul et Decanus tantum ubique. Cancellarius autem solus, nomine dignitatis in dupplicibus festis tantum in sexta leccione. Hec sunt officia Personarum. . . .

Cancellarius presens de leccionibus, missis, epistolis, ewangeliiis, acolytis, ebdomadariis tabulam instruit, lecciones audit. Lectionem eciam Domini Episcopi solempnibus diebus audit: librum ei defert in quo legitur in principio matutinarum. In ultima eciam leccione serico indutus legenti Episcopo ministrat.

Clericos eciam gradus inferioris de ecclesia ordinandos introducit, et examinatos in scolis Domino presuli representat ordinandos. Et de talium excessibus justiciam exhibet cuilibet conquerenti.

Cui eciam subsunt scolares in civitate morantes, exceptis scholaribus unius scole de Arcubus, et unius scole in Basilica Sancti Martini Magni, qui se privilegiatos in hiis et aliis esse contendunt. Idem eciam cancellarius armarium cum libris ecclesie scolasticis custodit.

STATUTES COLLECTED BY RALPH OF BALDOCK, DEAN, 1294-1304,
CONFIRMED BY HIM AFTER HE WAS CONSECRATED BISHOP,
30TH JANUARY, 1305-6.

THE CHANTER'S OR PRECENTOR'S DUTIES.

[St. Paul's Mun. W. D. 9, f. 101. Printed in W. Sparrow Simpson's *Registrum Statutorum*, 22 seq.]

Pt. I. chap. 54. DE OFFICIO ET POTESTATE CANTORIS.

c. 1300.

Cantoris officium est chorum in cantus elevacione, depressione, et psalmodia regere; Cantores per magistrum Scole cantus in tabula ordinare, negligentes ad cantandum excitare, tumultuantes et inordinate discurrentes per chorum modeste arguere et sedare. In festis maioribus si in choro fuerit instructus ut Cantor antiphonas super *Benedictus* et *Magnificat* et cantus processionales et sequencias inchoare, pueros introducendos in chorum et ad cantum intitulos examinare.

THE SONG SCHOOLMASTER.

Pt. I. chap. 55. DE MAGISTRO SCOLE CANTUS.

Magistrum Scole Cantus in ecclesia Sancti Gregorii, salva Decano et Capitulo ipsius collacione, preficere, et capas chori per substitutum Thesaurarii in chorum delatas per suum succentorem distribuere secundum statum et condicionem personarum. Omnis tamen potestas corrigendi delinquentes in choro ad Decanum et Capitulum pertineat sicut ante ordinacionem cantoris pertinere consuevit. Debet eciam in omni dupplici festo Rectores chori de cantibus incipiendis instruere, et canonico ad altare celebranti *Gloria in excelsis* intonare.

¹ Henry of Cornhill became dean in 1241. The customs of H. of Cornhill are said to be "nondum approbatis", probably because time had not yet run, viz. 60 years.

THE CHANCELLOR'S DUTIES.

Pt. I. chap. 56. DE OFFICIO ET POTESTATE CANCELLARII.

Cancellarii officium est de leccionibus, missis, epistolis, et evangeliis ebdomariis tabulam instruere, lecciones audire, in ultima leccione serico indutus legenti Episcopo ministrare, sextam leccionem per se legere. Clericos eciam gradus inferioris de ecclesia ordinandos introducere, et examinatos in scolis episcopo presentare ordinandos; et de talium excessibus justiciam cuilibet querelanti exhibere; cui eciam subsunt scolares in civitate morantes, exceptis scholaribus scolarum de Arcubus et Sancti Martini magni, qui se privilegiatos in hiis et aliis esse contendunt.

THE GRAMMAR SCHOOLMASTER.

Pt. I. chap. 57. DE MAGISTRO IN ARTIBUS SCOLE GRAMATICE PREFICIENDO.

Idem eciam Cancellarius magistrum de artibus scolis gramaticis preficit, et scholas ipsas congrue reparari facere tenetur; litteras et cartas capituli componit, et que legende sunt in capitulo legit. Sigillum principaliter custodit; pro qualibet carta sigillanda vel innovanda ad utilitatem eorum quibus fiunt, unam libram piperis recipit, et capitulum tres solidos. Decanum, si ad ordines promovendus fuerit, vocat ad titulum *Sancti Pauli*. Libros scolasticos in armariolo principaliter custodit: quos singulis annis coram Decano et aliis ad hoc vocatis exhibere debet, ut nullus deterioretur vel peioretur; et registrum librorum illorum apud Decanum et Cancellarium et fratrem tercium ad hoc deputatum distincte scriptum conservetur.

THE ALMONER'S DUTIES.

c. 1310.

Pt. V. chap. 8. DE ELEMOSINARIO.

Elemosinarius Ecclesie Sancti Pauli sub obediencie et prestiti juramenti debito diligenter observet, ut diebus statutis distribuatur elemosinas secundum modum per illos ordinatum qui ad hoc ipsum redditus elemosinarie contulerint. Pauperes eciam mendicantes, quos in cimiterio vel deprope mori contigerit, faciat gratis secundum morem solitum sine more dispendio in majori Cimiterio tumulari. Habeat insuper continuo secum octo pueros ad Ecclesie ministerium ydoneos, quos per seipsum vel alium magistrum inspectantibus ad ministerium Ecclesie et litteratura ac bonis moribus diligenter faciat informari. Pro dictis vero pueris recipiendis vel alendis nichil recipiat ex pacto ab aliquibus exteris preter stipendia constituta, nec per favorem recipiat, nec retineat aliquos pueros nisi ydoneos ad Ecclesie ministerium supradicte. In singulis eciam quarteriis chori stent duo pueri, nec alternent loca, nisi ministerii sui necessitate postulante. Item, dicti pueri chorum ingressi non egrediantur nisi ex causa rationabili ad ministerium suum agendum. Item, dicti pueri cereos absque ceroferariis non ferant, et cereos illuminent et extinguant certis temporibus, sicut congruit secundum mysticam rationem; et si cereos bajulando ipsos desidiose fregerint, eo ipso perdant residuum cereorum in fine septimane. Quociens vero dicti pueri ad scholas vel spaciandum ire debent, pariter eant et redeant sub ducatu alicujus maturi hominis ad hoc per Elemosinarium assignati, ne puerili levitate sparsim evagentur inhoneste. Item, dictus Elemosinarius omnes redditus ad Elemosinarium spectantes plene et distincte scribi faciat; et infra mensem Decano et Capitulo tradat, ut in registro Ecclesie ad perpetuam memoriam describantur.

THE GRAMMAR SCHOOLMASTER'S DUTIES.

Pt. V. chap. 10. DE MAGISTRO SCOLARUM GRAMATICE.

Quod magister scholarum tabulam lecture scribat vel scribi faciat vice Cancellarii, quociens opus fuerit, secundum approbatum morem Ecclesie congruentem. Item, quod more solito

chorum sequatur in habitu congruente et primam legat leccionem in dupplicibus festis, et tunc ascultet et corrigat saltem minores ad tunc lecturos. Item, quod more solito disputationes dialectice¹ et philosophie teneat apud Sanctum Bartholomeum in festo ejusdem, et disputata determet apud Sanctam Trinitatem.

THE BOY-BISHOP'S CELEBRATION.

Pt. VI. chap. 9. DE OFFICIO PUERORUM IN FESTO SANCTORUM INNOCENCII.

1263.

Memorandum, quod Anno Domini Millesimo cc.lxiiij, tempore G. de fferring, Decani, ordinatum fuit de officio Puerorum die Sanctorum Innocencium, prout sequitur. Provida fuit ab antiquis patribus predecessoribus nostris deliberacione statutum, ut in sollennitate Sanctorum Innocencium, qui pro Innocente Christo sanguinem suum fuderunt, innocens puer Presulatus officio fungeretur ut sic puer pueris preesset, et innocens innocentibus imperaret, illius tipum tenens in Ecclesia, quem sequuntur Innocentes, quocumque ierit. Cum igitur quod ad laudem lactencium fuit adinventum, conversum sit in dedecus, et in derisum decoris Domus Dei, propter insolenciam effrenate multitudinis subsequentis eundem, et affluentis improborum turbe pacem Presulis exturbantis, statuendum duximus ut predicti pueri, tam in eligendo suo Pontifice et personis dignitatum Decani, Archidiaconorum, et aliorum, necnon et stacionariorum, antiquum suum ritum observent, tabulam suam faciant, et legant in Capitulo. Hoc tamen adhibito moderamine, ut nullum decetero de canonicis majoribus vel minoribus ad candelabra, vel turribulum, vel ad aliqua obsequia ejusdem ecclesie, vel ipsius Pontificis deputent in futurum, set suos eligant ministeriales de illis qui sunt in secunda forma vel in tertia. Processionem suam habeant honestam, tam in incessu, quam habitu et cantu, competenti; ita vero se gerant in omnibus in ecclesia, quod clerus et populus illos habeant recommendatos. Cum autem declinaverit Episcopus puer ad cenandum post vespervas Beati Johannis, ad cujus voluerit canonici Residentis domum, hac solum sit contentus familia. Duos secum habeat quos sibi eligit capellanos, duos quos sibi eligit ceroferarios, quinque pueros alios vice clericorum suorum, duos eciam de servientibus ecclesie, qui cum virgis Presulem precedent. Caveant autem sibi ne Capellanos vel Ceroferarios vel clericos suos alios, ut predictum est, de illis eligant qui gerunt personas stacionariorum, sive sint dignitates, sive alie, nisi persone quorum vicem gerunt sint absentes. Illustris autem persona qui vicem tenet Decani, adjunctis sibi quattuor sociis de aliis personis stacionariorum, si fuerint absentes, ut dictum est, ad domum declinet Decani. Ceteri vero qui personas optinent dignitatum, ad domos dominorum suorum declinent, quilibet contentus tribus sociis. Alii vero qui reliquorum stacionariorum personas gerunt, similiter ad domos dominorum suorum descendant, quilibet contentus duobus sociis. Et is ordo et numerus observetur, tam in prima cena quam in mensa diei, quam cena posteriori, nec cum eo cenabit ultima die, vel prandebit cum quo cenavit primo die. Ex premissis manifeste colligitur quod si descenderit Episcopus ad domum Decani, erit ibi cum xv clericis. Si ad domum alicujus optinentis dignitatem cum xiiij clericis. Si ad alterius privati Stacionarii cum xiiij. Die vero sollennitatis post prandium ad mandatum persone Decani convenient omnes in atrio Ecclesie, ibidem equos ascendant ituri ad populum benedicendum. Tenetur autem Decanus Presuli presentare equum, et quilibet Stacionarius sue persone in equo providere. In transgressores autem hujus constitutionis, &c.

Communi fratrum consensu provisum est et ordinatum quod de cetero non celebrentur O. O. O. contra Natale, nec aliquis Residens vel Stacionarius teneatur aliquos de Ecclesia cum absens fuerit pascere, nisi in dupplicibus festis; nec eciam Ebdomodarius quilibet celebrans missam in dominica ebdomade sue aliquos pascere teneatur, nisi octo personas solummodo, videlicet, ministros altaris, magistrum, Camerarium, et cantores. Acta sunt hec provisum et statuta in

¹ dyalecticie.

compoto cinerum, scilicet die Sabbati in festo Sancti Cedde, presentibus Decano, Archidiaconis London, Essexie, et Middlesexie, Thesaurario, Cancellario, Simone de Stanbrigg, Johanne de Sancta Maria, Reginaldo de Brandone, et Johanne de Luk.

THE ALMONRY BOYS.

Pt. VII. chap. 6. DE PUERIS ELEMOSINARIIS.

Item, quia pueri de Elemosinaria de Elemosina vivere debent, ordinatum est quod in domibus Canonicorum ad terram sedeant, non cum Vicariis ad mensam, ne superbiant et ebriosi fiant, et forte cicius luxuriosi et inepti ad servicium Ecclesie, et aliquando eo cicius hospite non salutato recedunt, et aliquando cum ad Elemosinariam de festo redeunt, dietam ibidem contempnunt et eorum Magistrum diffamant.

THE CHANCELLOR'S THEOLOGICAL SCHOOL.¹

[St. Paul's Mun. Box 24, no. 621.]

1315.

Whereas a house belonging to the Chapter of St. Paul's, at the north-east corner of Sarmonneris Lane, which Sir John Daveys, late Minor Canon, inhabited during his life, has been assigned to Sir Nicholas Housebonde, likewise Minor Canon, for his residence; the said Nicholas has made complaint that it is inconvenient for the purpose, on account of the grievous perils which are to be feared by reason of its distance from the cathedral church, and the crossing of dangerous lanes by night and the attacks of robbers and other ill-disposed persons which he had already suffered, and also on account of the ruinous condition of the building, and the crowd of loose women who live around it. The Chapter therefore assigns to him a piece of ground at the end of the schools, on which to make a house and a "viridarium", the said ground extending from the wall of St. Paul's to the wall on the south side of the church-yard bounding the garden of the Chapter, with various conditions as to the building. A.D. 1315. Witnesses: John de Sandale, Chancellor of England; Richard de Newport, Archdeacon of Middlesex; William de Meleford, Archdeacon of Colchester; Richard de Grene, the Treasurer, Robert de Clothale, the Chancellor, Thomas de Northflete, Henry de Sarracen . . . Walter de Thorp, William de Chateleshunte, and seven others named.

[St. Paul's Mun. Box 24, no. 865.²]

1332.

Assignment by John of Everdon, Dean, of all that place which is on the south side of the said church, from the door which is called "ostium capituli" as far as the schools in which the Chancellor lectures (*legit*), and so crosswise as far as the stone wall opposite, that is to say all that place which is called the garden of the Dean and Chapter, for the building thereon of a chapter-house and cloister.³ Dated 18th Kalends of July, 1332.

BEQUESTS SHOWING THAT ALMONRY BOYS WERE CHORISTERS.

[Calendar of Hustings Wills, ed. Dr. Sharpe, i. 281, ii. 21.]

1315. Friday before 24 Aug.

Neuport (Sir Richard de) late Bp. of London. To Sir W^m de Tholeshunte & Sir Jⁿ de Haddelee his chaplains in S^t Pauls and their successors in his chauntries a messuage opposite S^t Paul's brewhouse.

¹ Abstract in Hist. MSS. Commn. Rep. IX. Appx. 52.

² Abstract in Hist. MSS. Commn. Rep. IX. Appx. 53.

³ Cloister and chapter-house built 1332.

To the Almoner of S^t Paul's a messuage in the parish of S^t Gregory, he rendering annually 20^s to chapel of B. V. M. in S^t Paul's; the residue to maintenance for 2 years of one or two boys when they shall change their voice, provided they have no other exhibition. Roll 47 (60).

London, Friday before S^t Bartholomew, Apostle.

1348. 14 Nov. Pulteney (Jⁿ de) K^t

(*cf.* Hist. MSS. Commn. Rep. IX. Appx. p. 47 a.)

Master of collegiate church of Corpus Christi near S^t Laurence, Candelwyk-street, to pay to Almoner of S. Paul's church 20^s for summer vestments for choristers, so that they sing every day after compline an antiphon with music and orisons for the dead in the chapel to be erected by the Testator's executors for the good of his soul. Friday after S. Martin, 1348.

1358. 16 July.

Ravonstone W^m de. Rep. Chaplain & Almoner. (*cf.* Hist. MSS. Commn. Rep. IX. Appx. 47 b.)

A tenement called le Stonehous in Paternoster Row given for support of one extra chorister or two.

STATUTES FOR THE ALMONER.

[Brit. Mus. Harl. MS. 1080. Registrum Elimosinarii.]

Before 1263.

STATUTA ELIMOSINARII.

Elimosinarius ecclesie Sancti Pauli sub obediencie et prestiti juramenti debito diligenter observat ut diebus statutis distribuat elemosinas secundum modum per illos ordinatum qui ad hoc ipsum redditus elemosinarie contulerunt.

Pauperes et mendicantes quos in cimiterio vel de prope mori contigerit faciat gratis, juxta morem solitum, sine dispendio in majori cimiterio tumulari.

Habeat insuper cotidie¹ secum octo pueros ad ecclesie ministerium ydoneos quos per seipsum vel alium magistrum in spectantibus ad ministerium ecclesie et litteratura ac bonis moribus diligenter faciat informari. Pro dictis vero pueris recipiendis vel alendis nichil recipiat ex pacto ab aliquibus exteris preter stipendia constituta, nec per favorem recipiat vel retineat pueros aliquos nisi ydoneos ad ecclesie ministerium supradictum.

In singulis quarteriis chori stent duo pueri nec alternent loca nisi ministerii sui necessitate postulante.

Item dicti pueri laute ingressi non egrediantur nisi ex causa rationabili ad ministerium suum peragendum.

Item dicti pueri cereos absque cere ferariis non ferant, et cereos illuminent et extinguant certis temporibus sicut congruit secundum mysticam rationem et si cereos bajulando ipsos desidiouse fregerint, eo ipso perdant residuum cereorum in fine septimane.

Quociens vero dicti pueri ad scholas vel spaciaturum ire debent, pariter eant et redeant sub ducatu alicujus maturi hominis ad hoc per Elimosinarium assignati, ne puerili levitate sparsim evagentur inhoneste.

BEQUESTS BY ALMONER FOR ALMONRY BOYS, MONEY, BOOKS, AND ENDOWMENT FOR SHOES.

1328-9. 20 Jan.

[*Ibid.* f. 32.]

Testamentum Domini Willelmi de Tolleshuntes Elemosinarii ecclesie Sancti Pauli, quo legavit duas marcas annui redditus Decano et Capitulo dicte ecclesie ad calciamenta puerorum Elemosinarie.

In Dei nomine Amen. Ego Willelmus de Tolleshunte, Elemosinarius ecclesie Sancti Pauli

¹ continuo.

London, in firmo proposito visitandi limina Apostolorum Petri et Pauli, Rome, Deo disponente, in remissionem peccatorum meorum, condo et ordino testamentum meum xx die Januarii A.D. secundum cursum Ecclesie Anglicane 1328 sub hac forma . . .

Item lego pueris ecclesie quos ego educavi senioribus in Elimosinaria existentibus cuilibet xij^d et junioribus cuilibet vj^d . . .

Item lego Hugocionem meum meliorem et Priscianum majorem et minorem in uno volumine ligatum, et Ysodorum ethemologiarum, et omnes libros meos gramaticales preterquam illos quos habet Radulphus clericus meus, et omnes quaternos sermonum de Festo Sanctorum Innocencium, quos tempore meo solebant Episcopi Puerorum pronunciare, ad remanendum in Elemosinaria predicta imperpetuum, ad usum fructum puerorum in eadem degencium, ita quod nullatenus accommodentur extra, aut alienentur.

Lego eciam libros artis dialectice, de quibus Johannes de Stanground habet veteres logicas et novas, cum libris naturalium et alios libellos artis ejusdem, quod hujusmodi libri accommodentur pueris aptis ad scolatizandum cum ab elemosinaria recesserint; ita tamen sub ydonea caucione restituendi, ne alienentur.

Libros eciam fisicales quos habeo plures de medicinis, et eciam libros juris civilis, viz. Instituta, Codicem, Digestum Vetus, et Authentica, ac alia scripta legalia, lego ad usum puerorum modo et forma suprascriptis.

Item duas marcas annui redditus cum omnibus pertinentiis suis in London exeuntes de teneamento quondam Walteri de Geddyng, quod postmodum habitavit Dominus Edmundus de Passele miles, prope veterem piscariam, mihi legatas per Dominum Ricardum de la Mare de Bernolby, capellanum, ad ordinandum et disponendum de eis pro animabus ejusdem Ricardi et Domini Johannis de Lyndeseya avunculi sui, prout salubrius et commodius videro expedire imperpetuum, sicut plenius patet in testamento ipsius Ricardi, probato, proclamato et irrotulato in Hustingo London de placitis terre die Lune in crastino Sancte Trinitatis anno regni Regis Edwardi filii Edwardii xvij^o, do et lego Decano et Capitulo ecclesie Sancti Pauli London et eorum successoribus imperpetuum, ad augmentum piorum operum Elemosinarie ipsius ecclesie sicuti subinserir¹;

ut videlicet, Elemosinarius dicte ecclesie, qui pro tempore fuerit, imperpetuum dictum redditum duarum marcarum colligat et percipiat, et pueris Elemosinarie choro ecclesie deservientibus, quibus ante hec tempora nihil certum pro calciamentis extiterit² ordinatum de dicto redditu de calciamentis necessariis provideat imperpetuum quatinus dicta pecunia se extendat.

Pro quibus calciamentis predicti pueri singulis diebus mane cum surrexerint, et sero priusquam eant cubitum psalmum De Profundis Clamavi cum Pater Noster, et Ave Maria; et oracionibus Inclina Domine, Miserere, et Fidelium, pro animabus dictorum Ricardi et Johannis, et eciam pro anima mea et animabus omnium fidelium defunctorum, dicent imperpetuum.

In testimonium premissorum sigillum meum presentibus apposui et ad majorem huius rei evidenciam sigillum Capituli Sancti Pauli ad negocia apponi procurari. Datis et actis London die et anno supradictis.

Istud Testamentum factum fuit per Dominum Willelmum de Tolleshunte Elemosinarium ecclesie Sancti Pauli et coram nobis Decano et Capitulo exhibitum et approbatum, ac sigillo nostro communi ad negocia consignatum, in testimonium approbacionis ejusdem ad rogatum dicti Testatoris in Capitulo nostro xij Kalendas Februarii A.D. mcccxxvij.

Testibus Willelmo de Shoredich, aurifabro, Johanne de Horkesle, ligatore librorum, Johanne Blome, Gilberto ymaginario, Johanne de Waltham, pictore, Edwardo de Loing, et Thoma Aunsel et aliis.

Istud Testamentum probatum fuit, proclamatum et irrotulatum in Hustingo London de communibus placitis tento die Junii proximo ante festum S. Margarete anno regis Edwardi III post Conquestum quarto. Waltham.³

¹ subscribetur, Hackett.

² ex tunc, Hackett.

³ Omitted by Hackett.

Hoc Testamentum Domini Willelmi de Tolleshunte nuper ecclesie nostre elemosinarii antea in vita ejusdem Willelmi coram nobis Decano et Capitulo S. Pauli London probatum, iterato iij Kalendas Marcii post mortem ipsius Willelmi A.D. mccc^{mo}. xxix^o probatum fuit coram nobis.

GIFTS TO ALMONRY BOYS (CHORISTERS) AT OBITS.

[St. Paul's Mun. W. D. 9.]

Idibus Julii. Obiit Thomas Ayswy :

Majoribus Canonicis	xl ^s
Minoribus Canonicis	ii ^{mrcs}
Vicariis Capellanis et Secundariis	xxx ^s
Servientibus	xl ^d
Pauperibus per manus Elemosinarii	8 ^{li}
Ad vesturam puerorum	xx ^s
Summa £14 quos solvet Cancellarius de ecclesia de Borham una cum	xl ^s
Ad obitum Henrici de Sandwyco Episcopi. Termini solucionis sunt	
hii : In crastino quo cantatur Letare Jerusalem	xii ^{mcs}
Et in crastino S. Johannis Baptiste	xii ^{mcs}

ix Kalendas Augusti. Obiit Radulphus Baldok :

Majoribus Canonicis presentibus in officio	l ^s
Pueris elemosinarie	xii ^d

xvi Kalendas Septembris. Obiit Johannes de Wengham :

Majoribus Canonicis	j ^{mcs}
Minoribus Canonicis	ii ^{j^s}
Vicariis	v ^{j^d}
Capellanis	ij ^s
Servientibus	x ^d
Pueris elemosinarie	vii ^{j^d}

xv Kalendas Septembris. Obiit Rogerus de la Leye :

Pueris elemosinarie	vii ^{j^d}
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Nonis Octobris. Obiit Henricus de Borham :

Majoribus Canonicis	v ^{li}
Minoribus Canonicis	xvii ^{j^s}
Pueris elemosinarie	v ^s

Prior de Leye solvet de terris in Borham.

vii Idus Octobris. Obiit Willelmus de Cateteshante :

Octo pueris elemosinarie	vii ^{j^d}
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vi Idus Octobris. Pueris elemosinarie vii^{j^d}

De tenemento W. de Bussle in parochia Omnium Sanctorum in Bredestrete.

v Idus Decembris. Obiit Ricardus de Graueshende Episcopus.

Pueris elemosinarie	ix ^d
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PAYMENTS FOR ALMONRY BOYS (CHORISTERS) FROM CHANTRIES.

[St. Paul's Mun. W. D. Chantry Certificate by Dean and Chapter.]

R. *Baldock's* Chantry.Item to pore students being sum tyme choresters of the saide Cathedral Church towards ther exhibition yerely xxx^sJ. *Poulteney's* Chantry. 22^o Edward III.Item to chorysters of Paules yerely for their somer lyveres xx^sR. *Munday*.To the choristers of Pawle's yerely liij^s. iiij^dThos. *Ever*. H. iv.To the poore choristers of Paules towards their exhibicion in the University yerly payde xxx^sT. *Morel*, Dean. H. vi.To the Amener of the Cathedral Church of Paules in London towards the fyndyng of the chyldren ther yerely paiede xiiij^s. iiij^d.

PETITION TO KING ON BEHALF OF THE THREE SCHOOLS OF LONDON FOR PROHIBITION TO LORD MAYOR'S COURT SUPPORTING RIVAL SCHOOLS.

[*Rotuli Parliamentorum*, iii. 324. 17 Richard II.]

1393-4.

Au Roy notre tres redote Seigneur supplient voz humbles Chapelleins et devoutz orateurs W. Ercevesque de Canturbirs, l'Evesque de Loundres, le Dean de vostre franke Chapelle de Saint Martin le Grant, et le Chancellor de l'Eglise de Saint Paul en Loundres, que combien que par la Loy esperituel, et Custume en celle partie prescript, l'ordenance, disposicion, et examinacion des Mestres de certaines Escoles de la facultee de Gramer deinz votre Citee de Loundres, et les Suburbes d'icelle, as ditz Ercevesque, Evesque, Dean, et Chancellor, ove l'avys du dit Evesque de Loundres, de temps dount memoire ne court, et a nulles autres pertinerent, pertinent, ou pertenir devoient; nientmoins ore tard ascuns estranges lour feynantz Mestres de Gramer, nient apres' suffisamment en mesme la facultee, sanz assent, scieu, ou volunte des avant ditz Ercevesque, Evesque, Dean, et Chancellor, volentriement usurpantz lour Jurisdiccion et poair, encountre loy et custume tiegnent Escoles generales de Gramer en vostre dite Citee, en deceite et illusion des enfantz, en grant prejudice de voz liges, et de la jurisdiccion de Saint Eglise: Et par la ou les troys Mestres des Escoles de Saint Paul, et des Arches, et de Saint Martin avant dit, pur grant ease et profit de voz ditz subgiez ont pursuiz lour droit encountre les estraungers Meistres suis ditz en Court Christiene, selonc la forme de la loy de Saint Eglise, et en grant partie de lour plee procedez, les ditz estranges Mestres ont pursuiz devant Vous en Court seculer encountre les ditz troys Meistres duement receuz et auctorizez, afin que les ditz Meistres estraunges puissent tenir lour Escoles generales sanz assent des Ercevesque, Evesque, Dean, et Chancellor suis ditz, et que les ditz troys Meistres suis ditz deussent entierement surseier de lour dite processe en la Court Christiene suis dite.

Plese a votre roial Magestee grantier voz gracieuses Lettres du Prive Seal, directez as Mair et Aldermans de vostre dite Citee, eux comandantz, que par consideracion si bien de l'interesse

que Vous avez en ce cas a cause de vostre franke Chapelle suis dite, come le prejudice des Ercevesque, Evesque, et autres suis ditz, qu'ils ne soy mellent, n'attemptent rien en celle partie, par ont la Jurisdiccio de Saint Eglise, ou le proces entre les ditz parties eue en la Court Christiene soit destourbe, encountre la forme de la Loy et Custume ent usee, pur Dieu, et en oeuvre de charite.

PETITION OF COMMONS THAT NO SON OF A LABOURER IN HUSBANDRY
MAY PUT HIS SON APPRENTICE UNLESS HE HAS 20s. A YEAR AT
LEAST IN LAND, BUT MAY PUT HIM TO SCHOOL.

[Statutes of the Realm, 7 Henry IV. c. 17.]

1405-6.

Mes qil soit mys de servir a autiel labour, soit il deinz Cite ou Burgh ou dehors, come ses ditz Piere ou miere usent, ou autres labours come leur estates requiergent. . . .

Purveux toutesfoitz que chascun homme ou femme de quele estate ou condicion qil soit, soit fraunc de mettre son fitz ou file d'apprendre letteure a quelconque escole que leur plect deinz le Roialme.

WRIT OF PRIVY SEAL OF KING HENRY VI. FOR LETTERS PATENT FOR
TWO NEW GRAMMAR SCHOOLS IN LONDON.

[P.R.O. Privy Seals, 24 Hen. VI. 8101 *seq.* Printed in *Excerpta Historica* (London, 1831), 5.]

1446. 3 May.

Henri by the grace of God King of Engelande and of Fraunce and Lorde of Irlande To oure Chancellor of Engelande greting.

For asmoche as the right reverent fader in God Therchebisshopp of Canterbury and the reverent fader in God the bisshopp of London considering the greet abusions that have ben of long tyme withinne oure Citee of London that many and divers persones not sufficiently instruct in gramer presumynge to holde commune gramer scoles in greet deceipte aswel unto their scolers as unto the frendes that fynde them to scole have of their greet wysdome sette and ordeigned .v. scoles of gramer and no moo withinne oure said Citee; Oon withinne the chirche yerde of Saint Poule; an other withinne the collegiate Church of Saint Martin; the thridde in Bowe chirche; the iiijth in the chirche of Saint Dunstan in the Est; the .v. in oure hospital of Saint Anthony withinne oure said Citee. the whiche thei have openly declared suffisantz, as by their lettres patentes their upon maad it appereth more at large We in consideracion of the premisses have therunto graunted oure Royal wille and assent Wherefore we wol and charge you that here upon ye doo make oure lettres patentes under oure greet seel in due fourme declaring in the same oure said wille and assent, yevyng furthermore in commaundement by the same oure lettres unto alle oure subgittes of oure said Citee that thei nor noon of thaim trouble nor empeche the maistres of the said Scoles in any wyse in this partie. but rather helpe and assiste thaim in asmoche as in thaim is Yeven under oure prive seel at Guildeforde the iij^{de} day of May The yere of oure regne. xxiiij. Langeport.

Memorandum quod sexto die Maij anno vicesimo quarto superscriptum istud breve liberatum fuit Cancellario Anglie exequendum.

LETTERS PATENT OF HENRY VI. AS TO GRAMMAR SCHOOLS IN LONDON.

[Pat. 24 Henry VI. pt. ii. m. 28.]

PRO MAGISTRIS GRAMATICALIBUS IN CIVITATE LONDON.

1446. 6 May.

Rex omnibus &c. Salutem.

Sciatis quod cum venerabiles in Christo patres Archiepiscopus Cantuariensis et Episcopus Londiniensis ex eorum provida et innata prudencia magnas abusiones infra civitatem nostram London temporibus diuturnis frequentatas et usitatas Considerantes, quod quamplures et diverse persone in arte gramaticali minus sufficienter instructi scholas communes gramaticales pueros nonnullos et eorum amicos ipsos ad scholas exhibentes nequiter defraudando infra eandem civitatem tenere presumpserunt, quinque duntaxat scholas gramaticales, et non plures infra civitatem predictam statuerunt et ordinarunt;

unam videlicet, infra cimiterium ecclesie Sancti Pauli;

aliam infra ecclesiam nostram collegiatam Sancti Martini magni;

terciam in ecclesia Beate Marie de Arcubus;

quartam in ecclesia Sancti Dunstani in Oriente;

et quintam in hospitali nostro Sancti Anthonii civitatis nostre predicte;

quas per eorum litteras patentes sufficientes declararunt, prout in eisdem plenius apparet;

Nos de gracia nostra speciali premissa considerantes ad omnia predicta firmiter fienda et observanda nostrum regium assensum adhibuimus et favorem. Et hoc omnibus quorum interest innotescimus per presentes.

Damus autem omnibus et singulis ligeis nostris civitatis nostre predicte quod nec ipsi nec eorum aliquis perturbent nec impetant, perturbet nec impetat Magistros scholarum predictarum quovis modo in hac parte, set prius eis assistant et subveniant quantum in se existit.

In cujus &c. Teste Rege apud Westmonasterium vj die Maii.

Per breve de privato sigillo et de data predicta auctoritate Parliamenti.

PETITION FOR ESTABLISHING FOUR NEW GRAMMAR SCHOOLS IN LONDON, HENRY VI.

[Rotuli Parliamentorum, v. 137.]

1447.

To the full worthy and discrete Communes in this present Parlement assembled; Please it unto the full wyse and discrete Comunes in this present Parliament assembled to conside, the grete nombre of gramer Scoles, that somtyme were in divers parties of this Realme, beside tho that were in London, and howe fewe ben in thise dayes, and the grete hurt that is caused of this, not oonly in the Spirituell partie of the Chirche, where often tymes it apperith to openly in som persones, with grete shame, but also in Temporell partie, to whom also it is full expedient to have compotent congruite for many causes, as to youre wisdoms apperith. And for asmuche as to the Citee of London is the commune concours of this lond, wherin is grete multitude of younge peple, not oonly borne and brought forthe in the same Citee, but also of many other parties of this lond, som for lake of Scole maistres in thier oune Contree, for to be enfourmed of gramer there, and som for the grete almesse of Lordes, Merchauntz and other, the which is in London more plenteously doon, than in many other places of this Reaume, to such pouere Creatures as never shuld have be brought to so greet vertu and connyng as thei have, ne hadde hit ben bi the meane of the almes abovesaid; Wherefore it were

expedient, that in London were a sufficeant nombre of Scoles, and good enfourmers in gramer, and not for the singuler availl of ii or iii persones, greuously to hurte the multitude of yonge peple of all this Lond; For where there is grete nombre of Lerner, and fewe Techers, and all the Lerner be compelled to goo to the same fewe Techers, and to noon other, the Maisters wexen riche in money, and the Lerner pouere in connyng, as experience openly shewith, aynst all vertue and ordre of well puplik. And thise premises . . . and sturen of grete devotion and pitee, Maistre William Lycchefeld, parson of the parich Chirche of all Halowen the more in London; Maister Gilbert, parson of Seint Andrewe in Holbourne subarbs of the saide Citee; Maister John Cote, parson of Seint Petre in Cornhull of London; and John Neell, Maister of the Hous or Hospitall of Seint Thomas of Acres, and parson of Colchirche in London, to compleyne unto you; and for remedie besechyn you to pray the Kyng our Soveraigne Lord, that he bi thadvys and assent of the Lordes Spirituell and Temporell, in this present Parliament assembled, and bi auctorite of the same Parliament, will provide, ordeyne and graunte, to the saide Maistre William, and his successours, that thei, in the seid paressh of all Halowen; to the said Maistre Gilbert, and his successours, that thei in the saied parissch of Seint Andrewe; to the said Maistre John, and his successours, that thei in the said parissch of Seint Petre; and to the said John Maistre, and his successours, that thei within the forsaid parissch of oure Lady of Colchirche, in the whiche the said Hous of Seint Thomas is sette, may ordeyne, create, establish and sette, a persone sufficiently lerned in gramer, to hold and exercise a Scole in the same science of gramer, and it there to teche to all that will lerne; And that everiche of the saied Maistre William, Maistre Gilbert, Maistre John, and John Neel Maistre, suche Scole maister so bi him sette, and everiche of theire successours, suche Scole maister bi him, or bi ony of his predecessours so establisshed and sette specially as is above rehersed, may in his owne parich or place remove, and an other in his place substitute and sette, as often as ony of the said persones, or their successours, semith that cause resonable so requireth: and so to doo, iche of the said persones and their successours, as often as it happenyth ony of the said Scoles to be voyde of a Scole Maistre, in ony maner wise; to the honour of God, and encreasyng of vertu.

Responsio.

The Kyng wille, that it be do as it is desired; so that it be doone by thadvyse of the Ordinarie, othereles of the Archebishops of Canterbury for the tyme beyng.

THE THEOLOGICAL SCHOOL OF THE CHANCELLOR OF ST. PAUL'S.

[*Gregory's Chronicle* (Camd. Soc. N. S. xvii. 1876, ed. by James Gairdner), 230.]

1465.

Ande be fore thys tyme the fore sayde Docter Ive¹ kepte the scolys at Poulys þat ys undyr the chapter house, and there he radde many fulle nobylle lessonys to preve that Cryste was lorde of alle and noo begger, and he dyde hyt aftyr the forme of scholys, for he hadde hys abyte and hys pelyon, and a vyrger with a sylvyr rodde waytynge uppon hym. And the same fryer of Menors that answeyrd the Whyte Fryer answeyrd hym onys, and many tymys he² dyspute and radde in that³ scholys; he kepte hyt more then ij yere.

¹ Ive was, in 1463, Master of Whittington College. In 1458 he had been assigned by William Say, Dean of St. Paul's, to preach before King Henry VI. He "had been at Winchester in Wycham his College", as informant or head master from 1444 to 1454.

² Dr. Ive.

³ MR. GAIRDNER'S NOTE: "The Cathedral School of St. Paul, not the present St. Paul's School, which was founded at a later date by Dean Colet and dedicated to the Child Jesus." [This is, of course, a twofold error. The school mentioned was the Theological School on the south side of the church, not the Cathedral School properly speaking, *i.e.* the Grammar School, which was at the east end of the churchyard, a few yards north of which Colet built the new school, taking over the old school as part of its endowment.]

ST. PAUL'S BOY BISHOP'S SERMON.

[Printed by Wynkyn de Worde, c. 1496, and thence in Camden Society's (N. S. xiv) *Miscellany*, vii. p. 1, ed. E. F. Rimbault, 1875.]

c. 1490.

IN DIE INNOCENCIUM SERMO PRO EPISCOPO PUERORUM.

Laudate pueri Dominum.

PSALMO CENTESIMO XI^o et pro hujus collacionis fundamento.

Prayse ye children almyghty God, as the¹ Phyllosopre sayth in dyuerse places. . . .

As an arowe of hymselfe can not be mouyd ne dyrectyd unto the prycke without the redy conueyaunce of hym that shoteth, thurgh whom dyrectly he attayneth his ende and is shotte to the prycke. . . . It is not in mannes power to ouercome vyce of hymselfe. . . . Moche more those that bene chyl dren for tendernesse of aege and lacke of knowledge can not direct theyr dedes conueynently to that ende wythout specyall helpe of god. In token herof children newly sette to scole, lackynge the use of reason and the habyte of cognycion, haue a recourse to Goddys direccyon, Fyrste lernynge this (Cristis Crosse be my spede), And so begynnyth the a. b. c. In wytnesse of defawte of this perfeccion in knowlege, Pictagoras to the dyreccyon of Chyl dren founde fyrste thys letter in the a. b. c. Y the whyche as Ysider sayth Ethimologis is formyd and made after the symylytude of mannys lyfe. For this letter. *y*. is made of two lynes. One is a right lyne, the other is half ryght and half crokyd. And soo verily the Infant aege of a chylde is right nother disposyd to vertue nother to vyce. . . .

But the seconde aege is callyd Adolescencia, and hath two lynes, a ryghte and a crokyd, signyfyenge the dysposycion that he hath thenne to vyce and to vertue. In the whiche aege is the brekyng of euery chylde to goodnes or to lewdenes. . . . Thre thynges sayth Salomon ben harde to me to knowe. . . . But the fourth moste harde is to understonde The waye of a man in his growynge aege. Tho children thenne the whiche lacke discrecyon, use of reason, and perfyghte cognycion, and yet attayne to thende that is preparid for mannys blysse, As thyse blessid Innocentes whoos solempnyte we halowe this daye (Qui non loquendo sed moriendo confessi sunt). . . .

In the begynnyng thenne of this symple exhortacion, that I a chylde, wantynge the habite of cunnynge . . . make . . . prayers. In the whiche prayers I recomende . . . my broder byshopp of London your Dyocesan Also for my worshypful broder Deane of this cathedral chyrche, wyth all residensaries and prebendaries of the same And moost intierly I pray you to haue myself in your specyall devocion, so that I may contynew in this degree that I now stonde, and neuer her after to be vexed wyth Jerom's visyon . . . whanne . . . he answerde and sayd (virgam vigilantem ego video) A waken rodde I se, sayde Jeremy. Truely thys waken rodde ofte tymes hath troubled me in my chyldehode, that lumbi mei impleti sunt illucionibus, et non est sanitas in carne mea . . . And therfor, though I be now in hye dygnyte, yet whan I se other here my mayster that was thenne, Operuit confusio faciem meam. . . . As Nero the emperour wolde to his mayster Seneca, the same wysshe I wolde to my mayster I loue soo well. And for ther true dylygence that al my maysters the whyche taughte me ony cunnynge in my youthe gaue to me, I wolde they were promyttid to be perpetuall felowes and collegeners of that famouse college of the kynges foundation in Suthwerk that men calle the kynges Benche, gretter worshypp I can not wysshe than for to sytte in the kynges owne benche. And for by cause Charyte is perfyghte yf it be extendyd as well to thende of the lyfe as it is the lyfe self, I wolde they sholde ende ther lyfe in that holy waye the whyche often times I radde whan I was Querester, in the Marteloge of Poulis; Where many holy bodyes deyed, callyd in latyn (Via Tiburtina), in englysshe asmoche to saye as the highwaye to Tiburne. . . .

Prayse, ye children, your god in your infant aege; prayse ye hym in your growynge aege;

¹ Here and throughout "th" is printed for the thorn used in the original.

And prayse ye hym perseuerauntly (usque in senectum et senium) in your mannys aege And in thyse iij praysyng of iij aeges shall stonde the processe of this symple collacion. . . .

. . . somtyme ryghtwysnesse was the cheyf ruler; Now Falshede is quarter mayster. . . . somtyme trouth stode upryghte, now he is fallen. Gode men haue inserchyd the strete where he felle. Some sayd he fell in Lombarde strete. Some sayde in Buklars bury. And whan it was utterly knowe he was fallen in euery strete. . . .

Whan that infant aege is ended, the fader prouydeth for hys chylde For a mayster, the whyche gyueth instruccion in small doctrines, as in his Donat, Partes of reason, and suche other, the whyche mayster comynly is callid pedagogis in Latin. Thys maister geuyth commande-mentes to the chylde in his growyng aege. And he breke them he is sharpely correctyd. There is no fawte that he doth but he is punyshyd; somtyme he wryngeth hym by the cere; sometyme he geueth hym a strype on the honde wyth the ferell; sometime betith him sharply wyth the rodde. And so wyth commaundementes and sharpe correccion he geuyth hym full Instruccion in the lower scyence. . . . As mankynde grewe in aege almyghty god prouided to man an enformer that was callyd Moyses, the whiche shold teche man his pryncipalles and smalle and rude doctrynes. And so the olde lawe taughte to man his Donat and Partes of reason. . . . And if we differre and woll not correcte ourselfe here in the scole of mercy, full greuously and moost sharply shall we abyde the swerde of correccion. . . .

The fourme and the maner how we sholde worship . . . In Chyldehode, Yongthe, and Manhode, Is shewyd to us by a praty conceyte of oure comyn Kalender in euery boke of servyse. . . . By *Kalendas* is understonde childhode . . . dedicate to devocion; thenne set the faders the children to scole, Thenne be they taught to serue god, to say grace, to help the preest to synge; For to be meke, gentyll, and lowely. Thenne say they oure lady matens, and ben ryght deuoute. . . . By the seconde daye that is callyd *Nonas* I understonde the seconde aege, that is callyd Juuentus . . . and herto . . . may the youthe of man applyed, that is in specyall from xiiij. yeres unto xvij.; In the whiche he is ful of undeucocyon. . . .

THE THEOLOGICAL SCHOOL OF THE CHANCELLOR.

[REGISTER OF BISHOP FITZJAMES, f. 127 b; printed in W. Sparrow Simpson's *Registrum Statutorum*, 413.]

Ordinacio Domini pro lectura in theologia.

c. 15..

In Dei nomine Amen. Cum ad honorem Dei fideique Cristiane et virtutis incrementum et continuationem, ministrorumque Ecclesie Cathedralis Sancti Pauli London omniumque clericorum et presbiterorum in hac inclita urbe commorantium et aliorum illic indies confluentium disciplinam et salutaris doctrine fomentum, divinique pabuli verbi Dei nutrimentum, per devotos, probosque, ac recolende memorie viros, in eadem Ecclesia pia consideratione fuerit ab antiquo salubriter statutum, provisum, et ordinatum, Quod Cancellarius Ecclesie Cathedralis predictae quiscunque pro tempore existens, lecturam in sacra theologia per se, vel per alium continue legeret et observaret, atque pro onere ipsius lecture supportande et continuande Ecclesia parochialis de Yeling, Londoniensis diocesis et jurisdictionis, ac Episcopi pro tempore existentis collacionis, cum suis juribus et pertinenciis universis dignitati cancellariatus in eadem Ecclesia fuerit et sit per bone memorie N., olim ejusdem Ecclesie verum patronum ac ordinarium, appropriata, unita, annexa, et incorporata, Lecturaque praedicta per nonnullos dicte Ecclesie Cancellarios eorum temporibus successivis annis transactis fuerit laudabiliter et effectualiter observata et continuata. Tandem tamen, quorundam Cancellariorum ejusdem Ecclesie incuria, culpa, desidia, et negligencia, incepit esse adeo rara, intercisa, et discontinuata, que et si paucis diebus unius anni observata et celebrata fuerit, per multos tamen sequentes annos neglecta, deserta, et pretermissa extitit, atque sic neglecta, deserta, et

pretermissa existit in presenti, prout facti evidencia et notorietas rei hoc inpresenciarum certo cercius manifestat et declarat :

Unde, cum nos, Ricardus Fitzjames, permissione divina London Episcopus, Ecclesiam nostram Cathedralē predictam et singulos ministros ejusdem juxta pastoralis officii debitum, gracia reformandi ea que erant ibidem reformatione digna, lapsaque in eadem erigendi et reparandi nuper visitaverimus, prout ipsam et ipsos de diebus in dies sic adhuc visitamus, inter cetera, in hujusmodi nostra ordinaria visitatione generali, detecta et comperta per nonnullos nostre Ecclesie praedictae ministros, piis animis et devotis mentibus, nostro fuit detectum officio, et exinde gravis quodammodo proposita querela, Quod lectura predicta tam utilis, quam necessaria ac devotis animis commodifera, per multos retroactos annos fuit penitus neciecta, quodque in dissuetudinem abiit, Sane, pendente visitatione nostra hujusmodi, habitis super premissis, in nonnullis sessionibus nostris, cum dilectis filiis Decano et Capitulo ejusdem Ecclesie, et magistro Willelmo Lichfield, Cancellario ejusdem moderno, tractatu, communicatione, et matura deliberatione, comperimus quod propter verbum *continue* in ordinatione et fundacione ipsius lecture insertum, Cancellarius Ecclesie predictae, cui onus sustentacionis et exhibitionis ipsius lecture incumbere et incumbit, illud onus sufferre et sustinere omisit, nimis grave et summe durum reputans et existimans tantum onus continue subire et supportare debere : Cum itaque plerumque in futurorum eventibus sic humani fallitur incertitudo judicii, ut non nunquam quod conjectura profuturum credidit, subsequens temporis transcursus intollerabile reddit et nocuum, ideo, non debet reprehensibile judicari, si, secundum varietatem temporum, statuta quandoque variantur humana. Et quemadmodum ad officium cujuslibet pertinere dinoscitur presidentis pro subditorum commodis salubriter ordinata facere inviolabiliter observari, sic, non minori cogenti rationis imperio, negligenter omissa et collapsa in revolutionem et restauracionem oportet deducere, et novi appositione remedii erigere, et renovare prudencius sic omissa. Unde nos, Ricardus, Episcopus antedictus, sentientes melius, utilius, ac honorabilius esse benignam et favorabilem interpretacionem illius verbi *continue* facere, ut ex hoc exercitium et officium memorate lecture saltem ad aliqualem usum et observanciam restauretur, et ad utilem statum reducat quod hujusmodi lectura propter importabile et durum onus continue observanciae ejusdem omnino praetermittatur et negligatur, habitis itaque super hoc, videlicet, quomodo illud verbum *continue* sit intelligendum et que ac qualis lectura censeatur vel intelligatur, esse continua, et aliis hujusmodi lecture restauracionem, observanciam, et continuationem concernentibus, cum Decano et Capitulo predictis tractata et matura deliberacione, Quedam statuta, ordinationes, provisiones, interpretaciones, declaraciones, et decreta, cum prefatorum dilectorum filiorum Decani et Capituli, ac Magistri Willelmi Lichfield, Cancellarii moderni, cuique interesse specialiter vertitur in hac parte, voluntate, consensu, et assensu expressis, facienda sive condenda decrevimus, per que sepepredicta tam salubris quam fructuosa lectura sic, ut premittitur (quod dolentes referimus quasi extincta), reviviscat et reincipiatur (Domino annuente) de cetero inperpetuum mansura. Quapropter, de voluntate, consensu, et assensu expressis predictis, statuimus, ordinamus, et decernimus quod Cancellarius Ecclesie nostre Cathedralis predictae modernus, et quilibet ejus successor futurus, singulis annis inperpetuum lecturam predictam, sub modo, forma, excepcionibus, et provisionibus infrascriptis loco consueto observare et continuare teneatur. In primis quidem, in vim voluntatis, consensus, et assensus predictorum, volumus, statuimus, ordinamus, et decernimus, quod Cancellarius hujusmodi, per se, vel per alium ejus deputatum, ad hoc sufficientem et idoneum, leget lecturam in theologia in Ecclesiā nostra Cathedrali predicta per tres dies simul et successive, vel per intervallum, seu saltem continuatos singulis septimanis, si tot dies fuerint in septimana legibiles, et a diebus ferialis sive festivis vacaverint. Sin autem tot dies festive, sive solennes feriale[s], in una septimana intervenerint et interciderint, quod non sint in una ebdomada tres dies legibiles a diebus festivis, sive feriali[bus], ut premittitur, vacantes, tunc volumus, statuimus, ordinamus, et decernimus, ut premittitur, quod per duos dies in illa septimana lecturam suam observabit. . . .

ST. PAUL'S SCHOOL BEFORE COLET

COLET'S EPITOME OF ST. PAUL'S STATUTES.

[BOOK II.]

Chap. 15. DE CANCELLARIO.

Cancellarius Ecclesiae et Capituli Scriba est : nam ad eum pertinet componere et scribere Epistolas Capituli, et legere coram Capitulo eas quae ad Capitulum transmittuntur. Is praecipue Sigillum custodit, et quae sigillanda sunt sigillat. Is praest omni lectioni in choro, et videt, ut quicquid legatur, id rite, pulchre, et distincte legatur : docet in hoc genere ignorantes, laudat beneficientes, male legentes corripit, et castigat. Episcopo aliquando legenti ultimam lectionem ipse Cancellarius librum sustinens ministrat. In majoribus Festis sexta lectio ab ipso Cancellario legi debeat. Is etiam praest literaturae, non solum Ecclesiae, sed etiam totius civitatis. Omnes Magistri Grammatices ei subjiuntur. Is in Schola Pauli Magistrum idoneum, quem ante Decano et Capitulo praesentaverit, praeficit ; et aedes illius Scholae sumptibus suis reficit. Is etiam libros Ecclesiae omnes scholasticos custodit, et Magister eruditionis et doctrinae est ; et auditoribus legere oportet sacras Literas, ad Dei cognitionem, et ad vitae et morum institutionem. Item, de numero librorum, et integritate eorum, quotiens vocatus fuerit, reddet rationem.

DE MAGISTRO GRAMMATICES.

Magister Scholae Grammaticae vir probus et honestus debet esse, atque multae et laudatae literaturae : is pueros doceat Grammaticam, maxime eos qui sint Ecclesiae ; eisdem exemplum bonae vitae ostendat : caveat magnopere ne scandalizet teneros animos aliqua foeditate, vel facti vel sermonis ; quinimo simul cum casta literatura imbuat eos sanctis moribus : sitque eis, non solum grammaticae, sed etiam virtutis, Magister. Is loco Cancellarii scribit in tabula, atque notat ordine, quid quisque legat in Ecclesia. Is etiam Magister habitum gerat in Choro, et in majoribus Festis primam lectionem legat.

COLET'S RE-FOUNDATION AND NEW ENDOWMENT OF ST. PAUL'S SCHOOL, 1508-12.

[From Colet's "Book of Evidences" among the Mercers' Company's Muniments.]

PREFACIUNCULA JOHANNIS COLETT IN HUIUS LIBRI CONTENTA.

c. 1512.

[f. I.] I, John Colett, Deane of Paulis, sonne and heyre unto Sir Henry Colett knight and Alderman of the cite of London and twyse Mayre of the same, havynge lefte unto me of my fader bothe certeyn goodes moeu-able and also lands called patrimony, desyring the said lands and goodes to be dispendid and to be disposed in suche use as in my mynde shal be moost honorable to God and profitable to man ; and seeyng as in my iugement nothing better in this world nor more commodiouse to Crist's church, that is to sey, all Cristen-dome ; and for the reformation of the same nowe sorowfully decayed bothe in goode maners and cleane litterature than good institucion and bringyng upp of childern in faith and charitie in wysdome and goode lyvyng in goode letters and laudable conversacion.

In the yere of oure lorde god A thousand fyve hundred and eight beganne to edifye in the Estende of the Churchyard of Paulis a scole house of stone for childern theryn to be tawght free to the nowmbre of an hundred fyfty and three.

And also ordeyned twoo techers perpetuall oon callid the Maister, and that other callid the Ussher or surmaister and conveyent stipend for their labours. And also bielded a mansion adjoyning to the saide scole at the northside for the maisters to dwell yn.

And in the yere of our lord a thousand fyve hundreth and twelf full accomplished and fynysshed the same scole and mansion in every poynt.

And made overlookers and surveyors supportours and maynteyners of the same scole and mansyon the honest substanciall and faithfull crafte of the Mercers of London of whiche companye my said fader was oon.

And gave also to the perfourmyng of the charges of the said scole by the way of sufficient mortefying after the order of the realme of Englonde lxxxiiijth vjth viijth clere above all charges, oonly reparacions except

and also my place in the parisshe of Stebbunhith. And delivered unto the saide Mercers all the evidences of the saide londs and all the writtings of the mortefying of the same, they alway to lye and remayne in the chamber of the scole.

And for bicause whan it shall be necessary to see any writtyng concernyng the saide londs they shall not be compelled to bryng owte theire evidence I caused this booke to be written, in whiche is conteyned the very ensamples and copies of all the writtyngs and muniments to the said matter apparteynyng as hereafter apperith, unto which booke they may resorte from tyme to tyme to have in it as sufficient instruction as thoughe they looked in the very origynalls.

MINUTES OF THE MERCERS' COMPANY.

MAISTER DOCTOR COLET, DEAN OF POULES, FOR THE SCOLE.

Courte of Assistens holden the ixth daye of Aprell the yere above written [1510].

1510. 9th April.

[f. 193.] When it was shewed by Maister Thomas Baldry mercer that Maister Doctour Colet, Dean of Poules, had desired hym to shewe unto the Compney that he is disposed for the foundation of his scole to mortife certen londes whiche he wold that this Compney shulde have if they wolde be bounde to maynteyne the said scole accordyng to the foundation aforesaid, and after long communication had amonge theym it was agreed that Maister Thomas Saymer oon of the Wardens and the said Mr. Thomas Baldry shall have communication with the said Maister Deane in the said mater and as thei shall se theryn to bryng reporte agayn to the Compney of Assistens.

Relacion from Mr. Deane of Poules for the Scole, xij Aprill.

1510. 12th April.

Maister Thomas Saymer, oon of the Wardens, shewed that he and Thomas Baldry had been with Maister Dean of Poules accordyng as it was agreed at the last courte of Assistens and had felde parte of his mynde for the foundation of the Scole in Poules church yarde, whereof he proposith to make oure Compney Conservators and Rulers, and desireth not to charge us forther then suche londes as he shall gyve us for the maytenaunce of the said scole may always be sufficient to discharge us; and the same Maister Deane will go unto the Kyng's grace and make suyte for the mortifying of the lands of the said Foundation, and at his returnyng again he will desire to have more communycation with the Compney. Wherfor it is agreed that the said Maister Saymer and Thomas Baldry shall go unto hym and knowe his further pleasure in this matter and to bringe reporte unto the Compney, and if they shall seme good to take with theym such other of our Compney as they shall thynke best.

REPORTE OF THE COMMUNICACIONS WITH MR. DEAN OF POULES.

1510. 16th April.

When was shewed by Maister Thomas Saymer Warden and Thomas Baldry that they had ben with Maister Deane of Poules and had communycacion with hym for the foundation of the Gramer Scole whiche he entendith to founde and make in Poules Church yarde. And the same Maister Deane was verrey glad that he myght have with us communycacion thereof in whom he proposith to put all the rule and governance of the said scole.

And for that he wolde the Compney should better understonde what that he entendith to put in oure handes for the mayntenance of the said scole, and further of his good mynde which he bayreth unto this felyshipp he delyvered a bill to the said Maister Wardens and Thomas Baldry conteynyng theryn the names of certeyn londes and the yearly value thereof clerely whiche he wolde that we shulde have for maynteynyng of the said scole and other certen articles comprised in the said bill, the copie whereof hereafter foloweth:

[f. 194.] Bukynghamshire

Weston Turvile by yere clerely	xxj ^{li} xj ^d	} xxxv ^{li} xj ^s ix ^d
Aston Clynton	.	.	.	.	.	vj ^{li} x ^s iiij ^d
Shirryngton	vij ^{li} xvij ^s vj ^d	

Cambridgeshire

Barton by yere clerely	vj ^{li} xiiij ^s iiij ^d
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Hertfordshire

Barkway by yere clerely

viii^{li} wiche is in
fee farne etc.

Summa omnium predictorum

li^{li} vs j^dItem his mynde is that ye shalbe charged to pay withyn the cite of London yerely li^{li} in suche maner as he shall devise.

Item when the Compney aforesaid had redd the forsaid bill and understoud his good mynde unto us they were well content and gave hym thankyns, and were also well content to go further with hym in the said mater, and after that the articles whiche he shall drawe for the good Rule and sure contynuaunce of the said scole shal be by us sene and well understoud, thanne we to shewe hym oure myndes thereyn and than to desire of hym to have suche Rule and order as we shall deme requisite and necessarie.

1510. 17th April.

MAISTER DEAN OF POULES.

The yonge men departed, the lyverey abode, to whom it was shewed of the good mynde and will that Maister Dean of Poulis bayrith unto the Compney in whom he is fully purposed to put his trust and confidens to have the rule and governaunce of his scole as more largely it apperith by dyvers courts of assistens before holden. Wherewith the Compney were well content and desired Maister Wardens that they wolde take some payns and diligens for thacomplysshement of the said good intent, &c.

COLET'S PETITION TO THE KING FOR LICENCE IN MORTMAIN TO ENDOW THE SCHOOL.

1510.

SUPPLICATIO AD REGIAM MAJESTATEM.

In the moste humble wyse shewith and besechith youre mooste gracioux highnesse youre contynuall oratour John Colet Deane of the cathedrall churche of Seynt Paule within youre citie of London. That where youre said oratour to the pleasur of God and for and in augmentacion and encrease as well of connyng as of vertuose lyvyng within this your realme hath nowe of late edified within the limitory of the saide cathedrall church a Scole house wherein he purposith that children as well borne and to be borne withyn youre said citie as elsewhere to the same repaying shall not onely in contynuaunce be substancially taught and servyd in laten tung; but also instructe and informed in vertuose condicions, whiche by goddis grace shall largely extende and habunde to the commen well of the people of this your Realme. And to the grete coumfort and commoditie of your grace and to youre heires: to have yong children of youre Realme bothe in conyng and vertue graciously brought upp in avoydyng manyfolds vices whiche these dayes for lake of suche instruccion in youth been gretly rootid and contynued in yong people to the grete displeasure of God, and for the perpetuall contynuaunce of the charges of the same for ever to be borne paid and susteyned according to such ordre and direction as youre said oratour by the speciall favour and licence of your Highnesse purposith to make and ordeyne. He intendith to geve and mortyfe landis and tenementis of the clere yerely valew of fifty and three poundis in the countie of Bukyngham to some body corporat at his denomynacion. In consideration whereof it may please your Highnesse of your most habundant grace and goodnesse by your gracioux lettres patents under your grete seale in due forme to be made to graunt and licence your said orator to geve and graunt manors lands and tenements in the said countie of the clere yerely valew of fyfty and three poundes above all charges to som body corporat and licence to the same body corporat the same landes and tenements to receyve and take to thentent beforesaid ony statute of landes and tenements to mortmayn not to be putt notwithstanding. And that withoute fyn fee or other charges therfore to be paide or borne to youre grace. And youre said oratour shall duely pray to God for the prosperitie of youre moste noble and royall estate long to endure.

The result of this supplication was the grant of letters patent dated 6th June in the 2nd year of Henry VIII., i. e. 1510, not, as too often wrongly given, 1511. As they have been several times printed, the letters patent need not be given here in full. They recited that nos (the king)

considerantes pium propositum Magistri Johannis Colet S.T.D. Decani ecclesie cathedralis S. Pauli Londoniis in edificacione jam cujusdam scole in cimiterio dicte ecclesie pro pueris in dicta Scola erudiendis in bonis moribus et litteratura pro meliori sustentacione unius Magistri et unius Hostiarii (usher) sive duorum Hostiariorum ejusdem et aliarum rerum necessariarum ibidem fiendarum granted licence custodibus et communitati mistere mercerie civitatis London et successoribus suis quod ipsi et successores sui dominia maneria terras (&c.) ad annum valorem £53 ultra omnia onera et reprisas . . . acquirere et recipere possint.

The patent was, in accordance with the petition, expressly granted without fine or fee; a not unusual concession when the foundation was educational.

THE DEAN AND CHAPTER'S GRANT TO THE GRAMMAR SCHOOLMASTER, W. LYLY,
OF A STALL IN CHOIR.

1510. 27th July.

Concessio Decani et Capituli Magistro scole grammaticalis de ingressu chori ecclesie cathedralis predicte et stallo congruenti ab antiquo solito et quod ab omni exactione parochiali ipse et sui liberi et immunes sint, ac gaudeat et gaudeant privilegio quo domus Eleemosinariorum puerorum dicte ecclesie quo ad sacramenta ecclesiastica gaudet, etc.

Universis Christi fidelibus ad quos presentes littere pervenerint seu quos infrascripta tangunt aut tangere poterint in futurum, Johannes Colet S.T.P. Decanus ecclesie cathedralis Sancti Pauli London et ejusdem loci Capitulum Salutem in auctore salutis.

Quia tam de antiqua laudabili et legitime prescripta consuetudine quam eciam statutis et laudabilibus consuetudinibus dicte ecclesie Cathedralis Magister scole grammaticalis prefate ecclesie Cathedralis Sancti Pauli London quicunque pro tempore existens ex corpore nostro, pro tempore quo magister ibidem steterit, fuerit atque chori memorate ecclesie tempore divini officii ingredi atque in stallo congruenti et prout solitum fuerit sedere quando ad premissum accedere voluerit sive laicus sive sacerdos existat, dummodo honeste et superpellicio commodo et congruenti hoc faciat, solebat et consuevit;

Atque tam in et pro ejus persona quam pro domo sua sive hospicio suo eadem libertate qua magister domus puerorum Eleemosinariorum ejusdem ecclesie gaudet et gaudere solebat.

Hinc est quod nos discretum virum Magistrum Willelmum Lyly primum magistrum nove scole Sancti Pauli opere lapideo pro erudicione puerorum tum in bonis moribus tum etiam litteratura in cimiterio ecclesie Sancti Pauli in parte orientali ejusdem gracie edificata et fundata et ejus successores in hujusmodi officio succedentes in corpus nostrum et dicte ecclesie assumimus;

Et ut ipse magister Willelmus Lyly et successores sui hujusmodi eorum officium circa premissa, quod valde saluberrimum et oportunum estimamus, quietius exercere valeat, et circa erudicionem puerorum in premissis diligentius vigilet et attendat, eidem Magistro Willelmo Lyly magistro hujusmodi et successoribus suis damus et concedimus atque presenti nostro scripto confirmamus quod tam hujusmodi magister scole quam ejus domus sive hospicium et successores sui in eodem officio ab omni exactione parochiali libera sit atque sint eorum quilibet, atque consimili gaudent, et gaudeant eorum singuli, privilegio quo domus Eleemosinariorum puerorum memorate ecclesie gaudet.

Et quod in illa domo nullum alium recognoscant aut recognoscat eorum aliquis curatum quam cardinales ecclesie cathedralis predicta a quibus omnia ecclesiastica sacramenta recipere debet et debebunt eorum singuli.

Salvis tamen nobis et successoribus nostris tribus libris sterlingorum pro portione hujusmodi domus sive hospicii per manus mercerorum London secundum formam indenturarum inter nos et eosdem mercesos in hac parte singulis annis infuturum solvendis.

In quorum premissorum fidem sigillum nostrum commune presentibus apposuimus, Datis 27 die mensis Julii A.D. 1510.

Courte of Assistens.

FOR THE SCHOLE OF POULES.

1510. 13th August.

When it was shewed by Maister Simon Rice that Maister Dean of Poules desired of the Compeny that they wolde do so muche labour as to call som lerned counsaill unto theym and to devise some maner wrytyngs wherby that the Compeny myght surely holde of the Dean and Chapitour of Poules the grounde wheruppon the scole house and the dwelling place for the Maister is or shalbe edified, and suche wrytyngs so devised, the said Maister Deane will cause to be sealed with the chapitour seale of Poules, The Compeny agreed that Maister Wardens with John Kyene and Beniamyn Dygby shall call lerned counsaill unto theym and to se the said wrytyngs made under the best maner that may be devised for the suretie of the felishipp and the pleasour of the said Maister Deane.

General Courte of Merchaunt Adventurers.

FOR THE SCOLE HOUS AT POULES.

1510. 17th August.

When after all were departed save oure owen Compeny it was shewed that whereas Mr. Deane of Poules and the Chapitour had sealed a dede of estate indented betwene theym of Poules and this compeny with the Chapitour seale, by the whiche we shulde receyve possession of the grounde whereuppon the scole hous is buylded in Poules churchyard and the scolemaister house shalbe buylded, to remaine to this place forever, when the counterpane shuld have been sealed with our comen seale and graunted; but afterwards by lerned counceyll another conveyance was devised to bryng the said londs to the compeny.

ST. PAUL'S SCHOOL BEFORE COLET

Assemble of the lyvery the xxiiijth daye of September.

FOR THE SCOLE AT POULES.

1510. 24th September.

Whereas Maister Doctour Colet, Deane of Poules, was present and shewed unto the cumpeny that he had opteyned certeyn wrytyngs of the kyngs good grace wherby he hath licens to mortyse in the cuntrey to this Compenny liij^{li} londe by yere for the foundation of the scole hous nowe lately bulded in Poules churchyerde of the godes of the said Maister Dean, whiche wrytyngs he brought with hym and shewed unto the Cumpeny and thanked theym of theyr good myndes that thei bare unto hym touchyng the said foundation, that it wolde please them to graunte unto hym to have the charge and besynes thereof. Sheweth more that by the grace of god he woll indevoyr hym so that he trusteth to put the Compenny in possession of the said lands on this syde Cristenmas next or sone after, and desired of the same compenny that they wolde assigne iiij persones that might resorte unto hym at suche tyme as he shall sende for them to ask avise comen and conclude uppon the fynnysshing of the premysse Than the cumpeny electe and chose theis persones whose names be after written to be dayly at his commaundement when he shulde send for them—Mr. Symon Ryce, Warden; John Keme; Benyamyn Digby; Thomas Saymer. And for defaulte of theis forewritten persones it was agreed that theis folowyng shall gyve hym their attendaunce when and as often as they shall be desired.

John Hosyer.

Ric. Berne.

William Browne.

Thomas Baldry.

John Robyns.

Thomas Hynde.

Moreover the said Maister Dean shewed unto the Compenny that for suche labour and busynes they and their successors shulde have in ordering of the said scole that they shulde have in this cite of London uppon this poynt of xl marke by yere in rents, &c.

Also where as the Wardens and Felishipp at the instance of the said Maister Dean had indented and covenanted with John Byrde carpenter for the buyldyng of a dwellyng house for the Scole maister in Poules Churchyerde for the whiche the said Wardens and Compenny be bounde by indentures to paye unto the said John Byrde jcxiiij^{li} vj^s viij^d sterling. The said Maister Dean delyvered openly afore the Compenny at the assemble unto Maister Simon Ryce cc^{li} st. in nobles and ryalls in parte of payment of alle suche costs and charges as shall be necessarie to be spent and paide for buyldyng of the said dwellyng place.

GRANT BY THE DEAN AND CHAPTER TO THE TRUSTEES OF THE SITE OF THE NEW
GRAMMAR SCHOOL.

1511. 28th March.

Carta Decani et Capituli facta diversis personis de terris ubi nunc erecta est nova Scola cum hospicio pro Magistro ejusdem scole.

Sciatis presentes et futuri Quod Nos Johannes Colett Sancti Theologie Professor et ecclesie Sancti Pauli Decanus ac ejusdem loci capitulum dedimus concessimus et hac presenti carta confirmavimus Johanni Hosyer de civitate London, Mercer, Benjamyn Dicby de eadem civitate, Mercer, et Symoni Rice de eadem civitate, Mercer, totam illam terram nostram jacentem juxta murum cimiterii ecclesie Cathedralis predicte ad partem orientalem inde, scilicet inter tenementum Alicie Cruce vidue ex parte australi et tenementum nunc in tenura Andree Renne ex parte boriali, et continet in longitudine ab austro usque ad boream 120 pedes assise et in latitudine ab oriente usque ad occidentem 33 pedes assise, super quam nunc de novo edificatur domus sive scola grammaticalis de opere lapideo cum hospicio pro Magistro ejusdem.

Habendum et tenendum totam predictam terram cum omnibus edificiis super eandem constructis prefatis Johanni Hosyer, Beniamyn Dicby et Simoni Rice et heredibus suis imperpetuum ad opus et usum dictorum [J. H., B. D., and S. R.] et heredum suorum imperpetuum;

et nos vero prefati Decanus et Capitulum et successores nostri totam predictam terram prefatis [J. H., B. D., and S. R.]; heredibus et assignatis suis contra omnes gentes warantzabimus et imperpetuum defendemus per presentes.

Sciatis insuper nos prefatum Decanum et Capitulum assignasse fecisse locoque nostro posuisse et constituisse dilectos nobis in Christo Dominum Willelmum Clerke clericum et Mauricum Haukebroke nostros veros et legitimos in hac parte attornatos ad deliberandum seisinam [etc.].

In cuius rei testimonium huic presenti carte nostre nos prefati Decanus et Capitulum sigillum nostrum apposuvimus, Datis in domo nostra capitulari 28 die mensis Martii A.D. 1511: et anno regni Regis Henrici octavi secundo.

GRANT BY THE DEAN AND CHAPTER TO THE SAME TRUSTEES OF THE OLD SCHOOL
OF POULIS.

1511. 28th March.

Carta Decani et Capituli facta diversis personis de antiqua scola cum quatuor shopis subtus eandem constructis.

Sciunt presentes et futuri Quod Nos [Dean and Chapter have granted and confirmed to the same three mercers as in last deed] totam domum gramaticalem sive messuagium nuper vocatam Poulis scole et quatuor shopas subtus eandem domum sive messuagium constructas nunc in tenura Willelmi Barell civis et groceri London et Johanne uxoris ejus pro termino annorum, situatam prope portam vocatam Seynt Austeyns gate videlicet inter tenementum pertinens Magistris sive Custodibus Pontis London, in quo Johannes Hichcoke civis et mercator scissor London modo habitat ex parte orientali, et quandam magnam portam cujus introitus ducit a regia via ibidem usque ad in cimiterium Ecclesie Cathedralis predicte ex parte occidentali, et continet in longitudine a predicto tenemento usque ad magnam portam predictam 55 pedes assise et in latitudine 20 pedes.

Habendum et tenendum totam predictam domum sive messuagium et predictas quatuor schopas prefatis [the three mercers. Warranty of title and power of attorney to deliver seisin follow, with witness clause as in last deed].

RELEASE BY THE CHANCELLOR OF ST. PAUL'S TO THE SAME TRUSTEES OF HIS RIGHTS
IN THE OLD SCHOOL.

1511. 28th March.

Relaxacio Cancellarii antique scole et de toto jure suo in eadem.

Omnibus Christi fidelibus ad quos presens scriptum pervenerit Magister Willelmus Lichfeld cancellarius ecclesie Cathedralis Sancti Pauli London[iensis] Salutem in Domino.

Sciatis me prefatum Willelmum remisisse relaxasse et per presentes imperpetuum quietum clamasse Johanni Hosyer, Beniamyn Dicby et Simoni Rice in eorum plena et pacifica possessione existentem totum jus titulum statum clameum et interesse et demandam que unquam habui habeo seu quovismodo in futurum habere potero de et in tota domo gramaticali sive messuagio nuper vocato Poulis scole (as in last).

Ita quod nec ego nec heredes nec successores mei nec aliquis alius nomine meo seu heredum vel successorum meorum aliquod jus [&c.] in predicta domo gramaticali sive messuagio predicto et predictis quatuor shopis cum pertinentiis de cetero exigere clamare vel vindicare poterimus, sed ab omni actione juris statu titulo clameo interesse et demanda inde et cujuslibet inde parcelle simus imperpetuum penitus exclusi per presentes.

In cujus rei testimonium huic presenti scripto meo sigillum meum apposui Dato 28 mensis Marcii anno regni Regis Henrici octavi post conquestum Anglie secundo [1511].

PROFESSION BY THE CHANCELLOR THAT THE RELEASE OF THE OLD SCHOOL WAS VOLUNTARY.

1511. 5th April.

Professio voluntarie relaxacionis antique scole magistri Willelmi Lichfelde, Cancellarii.

Universis sancte matris ecclesie filiis ad quos presentes littere pervenerint sive quos infrascripta tangunt aut tangere poterunt in futuro Willelmus Lichfelde, canonicus et residentiarius ecclesie cathedralis Sancti Pauli London atque cancellarius ejusdem ecclesie Salutem in auctore salutis.

Ad universitatis vestre noticiam omni modo meliori aut efficaciori quo possum aut potero in futuro deduco et sic deduci volo per presentes, Quod, quamquam toto tempore quo officium cancellarie hujusmodi in eadem ecclesia Cathedrali exercui et in eodem officio steti multam operam dederim cunctamque meam diligenciam fecerim ut cognoscerem quam auctoritatem aut quod jus ratione officii mei in illis quatuor shopis super quos videlicet in quodam superiori longa camera desuper edificata antiqua scola grammaticalis Sancti Pauli London tenta et occupata fuerat, aut in eadem antiqua scola michi ratione officii mei pertineat aut pertinere debeat tam in scriviis quam in statutis ejusdem ecclesie cathedralis Sancti Pauli London ea intencione debite exquisierim.

Quia tamen, prout coram Deo et in consciencia mea testor et fateor nunquam potui quippiam reperire quod significaret Cancellarium in memorata ecclesia pro tempore existentem aut me in officio hujusmodi aliquod jus in illis shopis et scola antiqua desuper edificata habuisse, neque ex eisdem quatuor shopis aut scola antiqua aliquid emolumenti vel redditus accepisse aut percepisse, quantum dicere aut intelligere potui, sed totam illam scolam antiquam una cum quatuor shopis hujusmodi ad Decanum et Capitulum ecclesie Cathedralis predicte pertinuisse, et in eorum jure a diu fuisse et esse, Ideo fateor me sponte et libere,

animo quoque deliberato totum jus quod pretendi in eisdem shopis et scola plene et integre relaxasse et hujusmodi juri scienter et expresse renunciassse [etc. ut supra], prout in quibusdam litteris quorum data est vicesimo-octavo die mensis Marcii A.D. millesimo quingentesimo undecimo, et anno regni Regis Henrici Octavi post conquestum Anglie secundo, de et super relaxacione hujusmodi factis et manu mea propria subscriptis, sigilloque meo sigillatis, plene liquet.

Et ut ad majorem declaracionem sive noticiam appareat memoratas litteras per me ut prefertur factas subscriptas et sigillatas fuisse et esse atque ad majorem corroboracionem earundem, easdem litteras atque omnia et singula in eis contenta quantum possum aut potero, et ad me attinet, ut supra, approbo et expresse ratifico volens ulterius et expresse consensiens quod Decanus et Capitulum supradicti et eorum successores futuri de illis shopis et scola cum suis pertinenciis in utilitatem Nove scole in cimiterio prefate ecclesie Cathedralis Sancti Pauli London nuper edificate, atque magistrorum et hostiariorum in eadem, prout sibi melius videbitur expedire, libere absque contradiccione mea aut successorum meorum imperpetuum.

In quorum premissorum fidem et testimonium presentes litteras manu mea propria subscripsi et eisdem sigillum meum apposui. Datis quinto die mensis Aprilis A. D. quingentesimo undecimo.

THE WARDENS TO HAVE THE ORDER OF THE SCOLE, ETC.

Also showed that Maister Deane wolde knowe the mynds of the Compeny whether they wolde that he shulde devyse the order of the Scole to be in the Wardens for the tyme beyng or ellis to the Assistens. The Compeny answered and said that they wolde that the Wardens for the tyme beyng should have the order thereof and non other.

Item, the said Maister Wardens shewede unto the Compeny that Maister Deane of Poules wolde gyfe us possession in suche londes as he hath mortysed in Bukinghamshire for the foundation of the scole in Poules Churcheyarde and that a letter of attorney was made to Benjamin Digby and Symon Ryce for to go and receyve possession for and in the name of all the Compeny of the Mercyrye, whiche letter of attorney must be sealed with oure comen seale, which the Compeny graunted.

1512. 26th April.

At a Court of Assistens holden the xxvjth day of Aprill was elected and chosen theis persones whose names be hereafter written whiche shall wekely attende upon Maister Dean of Poules at suche tyme as he shall appoynte them to com unto the new Scolehou at Poules when as he and they shall devise for to devyse make and ordeigne such ordenaunces rules and constitucions as shall be nedefull for the preservacion thereof.

Mr. John Robyns, Warden.
John Keme.

Symon Ryce.
John Aleyn.

Thomas Saymer.
Benjamyn Dygbyc.

THE WARDENS AND ASSISTANTS TO CONCLUDE WITH MR. DEANE OF POULES.

1512. Quarter day holden the xvth day of June.

At the same Court hit was agreed that Maister Wardens and thasistens shall have communycacion with Maister Deane of Poules and to conclude with hym uppon all suche articles as shall conserne the conservacion of the newe Scole at Poules, wherewith this felishipp shalbe charged, and what thyngs that the said Master Wardens with the assistens aforesaid shall seeme good to be done thereyn The holl Compeny with oon full consent promyse to be content therewith.

AT A COURTE OF ASSISTENS HOLDEN THE XVIIth DAYE OF JUNE THE BOKE OF ORDINAUNCE OF THE SCOLE OF POULES EXHIBET BY MR. DEANE.

1512. 17th June.

Maister Deane of Poules shewed furth and redd a boke contynying certeyn articles whereyn he hathe expressed the devise of his will to be fulfilled and observed as well by the Scolemaister in the newe scole at Poules that nowe is and hereafter shalbe as by the children that be or shalbe in the same scole and also by the felishipp of the mercery To whom he hath commyteed all the Rule and governaunce of all thyngs that shall apperteyne to the orderyng and charges that shalbe done and borne for the good contynuaunce and conservacion of the said scole And theym endued with certen londes and tenements sufficient to discharge theym for all maner of thyngs that shall be nedefull to the scole aforesaid.

And whan the Compeny had harde this forsaide boke redd and understoude his mynde theryn in every condicion they gave hym grete thankyns Promysyng hym that the Compeny wilbe glad to endevoire theymself to the accomplyment of his said Will written in the said boke consernyng the said Scole. And the same Dean promysed to sende hither a cople of the said boke &c. to thentent that if any thyng be to be added or demysshed (*sic*) thay may advertyse the said Maister Dean thereof that it may be redressed &c.

COLET'S PETITION TO THE POPE FOR A BULL TO ANNUL THE STATUTES OF ST. PAUL'S
RELATING TO THE CHANCELLOR'S POWER OVER SCHOOLS AND SCHOLARS AND FOR
CONFIRMATION OF COLET'S STATUTES OF THE RE-FOUNDED SCHOOL.

1512.

[Book of Evidences, f. 29.]

SUPPLICATIO AD SANCTISSIMUM DOMINUM NOSTRUM PAPAM.

Beatissime pater, Quum devotus orator sanctitatis vestre Johannes Colet, Sancte Theologie Professor, modernus Decanus ecclesie Cathedralis Sancti Pauli London, attenderet et consideraret nichil conducibilius esse ad cristianam vitam quam ut homines ab ipsa prima puericia ante omnia in elementis fidei catholice et bonis moribus maxime in hiis que sunt de necessitate salutis, que vel parentum incuria vel pedagogorum negligencia pro maxima parte vel ignorant vel non plene tenent, erudiantur, Deinde postea ut in bonis litteris quibus aptiores ad omnia studia fiant probe instituantur et exercentur;

Et ob eam causam quam idem orator ad honorem Omnipotentis Dei et utilitatem puerorum quorumcunque ut melius in predictis instituantur, magno suo sumptu proprio Scolam quandam in civitate London in platea sive cimiterio ejusdem Cathedralis ecclesie, loco quidem precipuo ac celebri, et quasi inter ipsos oculos civitatis, ubi aliter fuit quedam Scola nullius plane momenti, nunc de novo a fundamento opere lapideo et pulcherrimo non solum edificandam fabricandam et construendam curavit, atque Magistrum preceptores tam sancte vite quam bone litterature constituit sed preterea magnos annuos redditus et perpetuos ad sustentacionem et supportacionem ejusdem scole et magistrorum in eadem donavit et contulit, atque custodes sive gardianos et communitatem artes sive mistere merceriarum in eadem civitate prepositos et electores Magistri et rectores in omnibus ordinavit; et unacum antedictis communitate et custodibus sive gardianis, pro bona continuacione seu conservacione ejusdem scole et magistrorum atque ministrorum sano et deliberato consilio quedam statuta capitula formulas ordinationes et regulas pias et saluberrimas composuit et ordinavit; aliaque et alias secundum rerum emergenciam pro reformatione et regimine ipsius loci prout et ubi necessarium videatur indies facere atque ordinare intendit, prout huic negotio et huic operi sive intencioni ei melius videbitur expedire;

Cupiens ergo dictus Decanus summo opere quod quicquid per eum cum antenominatis communitate custodibus sive gardianis juste et pie circa predictum opus et scolam statumque et regulas ejusdem compositum ordinatumve sit, perpetuam habeat roboris firmitatem;

Et attendens quod in Registro Statutorum et consuetudinum ecclesie London in prima parte in titulo duodecimo sub rubrica "De officio et potestate Cancellarii" scriptum quoddam invenitur in quo disponitur sive inuratur quod "Scolares in dicta civitate morantes subsunt Cancellario dicte ecclesie; et quod ipse Magistrum de artibus Scolis Grammaticis preficiat, et scolas ipsas congrue reparari facere teneatur", ut in dicto libro plenius continetur, ad quem relacio habeatur; ex quo quidem statuto licet satis ineptum sit et in viridi observancia et usu minime habeatur ne posset tamen in futurum aliqua difficultas impedimentum turbacio vel molestia dicte scole fortasse eo pretextu emergere sive provenire, Idcirco ut scola ipsa in quibus deinceps mores docendi et studia celebranda sunt, ac preceptores sive magistri et adolescentes ipsi qui ibidem sunt imbuendi ab omni prorsus molestia et inquietudine perpetuis futuris temporibus sint immunes;

Recurrit igitur, clementissime pater, orator vester ad pedes sanctitatis vestre, que litterarum studia peculiari quodam presidio semper fovit et benigno favore prosequutus est, eam humiliter supplicando quatinus huic instituto operi ac futuro juventutis conventui et eorum quieti, ex indulgencia apostolica, providendo et consulendo dicto capitulo et statuto et omnibus in eo contentis in quantum disponit quod scolares predicti subsint Cancellario; et quod ipse debeat magistrum ipsis preficere et scolas reparare, ut premittitur, specialiter et expresse derogare; Illud quidem ex toto et in toto, quantum ad scolam predictam preceptores sive magistri ac etiam scolares ibidem futuros et commoratuos attinet, delere, cassare, annullare, et incitare dignetur, Ita quod non liceat Cancellario predicto, neque etiam cuiquam alteri persone cujuscunque gradus, status, dignitatis, condicionis aut preeminencie existenti se de dictis et in dictis scola preceptoribus magistris aut scolaribus et adolescentibus aut eorum aliquo vel eorum ministris, rebus aut bonis ad scolam predictam spectantibus et pertinentibus, et que in futurum ad premissa pertinebunt et spectabunt quovis modo vel facto, seu quovis quesito colore aut cujuscunque auctoritate se ingerere, immiscere vel impedire: necnon omnia et singula statuta capitula, ordinationes, formulas et instituciones, statum, normam, modum regimen et administracionem dicte scole magistrorum et scolarium et ceterorum ministrorum predictorum concernentes et concernencia facta et in futuro ut premittitur fienda per Decanum predictum una cum dicta communitate custodibus sive

gardianis, ex nunc prout ex tunc, et ex tunc prout ex nunc, auctoritate apostolica ex certa sciencia approbare confirmare et roborare.

Et insuper eadem auctoritate precipere et mandare Reverendo Domino Archiepiscopo Cantuariensi et Capitali Justitiario de Banco Domini nostri Regis Anglie et Majori civitatis London predicte quatinus ipsi vel duo aut unus ipsorum postquam super premissis apostolice littere fuerint expedite, per se vel alium seu alios faciant eadem auctoritate omnia et singula predicta firmiter observari, ac eidem scole communitati custodibus gardianis magistris et scholaribus predictis in premissis et aliis in hac parte necessariis, efficacis defensionis presidio assistentes, non permittant prefatum Decanum scolam communitatem gardianos magistros et scholares contra dictarum ordinationum regularum et formularum factarum et fiendarum tenores quomodolibet molestari; contradictores quoslibet auctoritate apostolica compescendo concedere et indulgere dignetur de gracia speciali. Non obstante statuto antedicto ac constitutionibus et ordinationibus apostolicis ac predicte ecclesie London juramento confirmatione apostolica vel quavis firmitate alia roboratis necnon aliis etc.¹ cum clausis oportunis et necessariis etc.²

¹ *Sic.*

² *Sic.*

X.—*On a Bronze Age Cemetery and other antiquities at Largs, Ayrshire.* By
ROBERT MUNRO, Esq., M.D., LL.D., Local Secretary for Scotland.

Read 9th June, 1910.

A PORTION of the town of Largs is built on a raised beach which here attains a breadth of nearly a mile, though in general it is a mere strip of flat land along the coast. This low ground is fertile, and beyond it rises a picturesque background of grassy hills which shelter the town and bay on the east, a combination of natural advantages which must have rendered the locality an attractive place of abode for man from the earliest times. A plot of cultivated land, near the termination of Nelson Street which intersects the raised beach, was acquired by a townsman as the site of a small villa. The area selected was slightly more elevated than the vacant ground on the east side, but its relative height with respect to its western boundary was uncertain, owing to the land there having been already built upon. It would, however, be no exaggeration to describe it as a low gravelly mound. While digging the foundations of the proposed villa nothing of an archaeological character attracted attention, but later on, in course of some outside operations close to the south wall of the newly erected building, the workmen came upon a small cinerary urn containing calcined bones. The vessel was shaped like a modern flower-pot, without any ornamentation, and stood mouth upwards, having, apparently, been simply deposited in a hole in the gravel. It appears to have been extracted in fragments, and dispersed among private collectors.

Some time afterwards, and not many yards from the same place, an irregularly shaped flag of weathered sandstone was uncovered about a foot below the surface of the cultivated soil. It lay in a horizontal position, and measured from 3 to 4 feet across its flat surface, and 4 inches thick. On its removal, an operation which entailed its being broken into two or three pieces (see fig. 1), there was exposed to view a roughly circular cist constructed of rounded stones about the size of a man's head. The stones, which merely formed a lining to a hole previously dug in the gravel, supported the flagstone, thus serving as an effective cover to the

cist and its contents. The space thus enclosed, measuring 2 to 3 feet in diameter and 18 inches deep, contained no less than seven cinerary urns of various sizes embedded in sand, and all of the same flower-pot shape as the one previously dug up. All the urns stood with their mouths upwards and contained calcined bones. They were made of coarse pottery with thick walls, but so soft and fragile



Fig. 1. The dilapidated cist, showing the broken cover-stone and five of the seven urns found in it. The riddle contains broken pieces of urns and calcined bones.

(Photographed by Mr. W. Coulls Hampton.)

that, on being handled, most of them fell into pieces. Mr. Taylor, the owner of the property, recognizing on this occasion that the relics might be of scientific value, was at a loss how to dispose of them, when, fortunately, Mr. Campbell, Curator of the Glasgow Art Gallery and Museum, having incidentally heard of the find, visited the locality with the object of securing at least part of the spoil for the Museum. The result was that Mr. Taylor generously handed over to him all

that could be gathered together of the urns as a contribution to the Antiquarian collection in his Museum. Mr. Campbell at once took possession of the fragmentary urns and transported them to the Museum, where, after the pieces were slowly dried in a uniform temperature, most of the urns were so far reconstructed as to show their original dimensions (fig. 2). The following measurements were taken by one of Mr. Campbell's assistants and the writer on the 29th June, 1909:

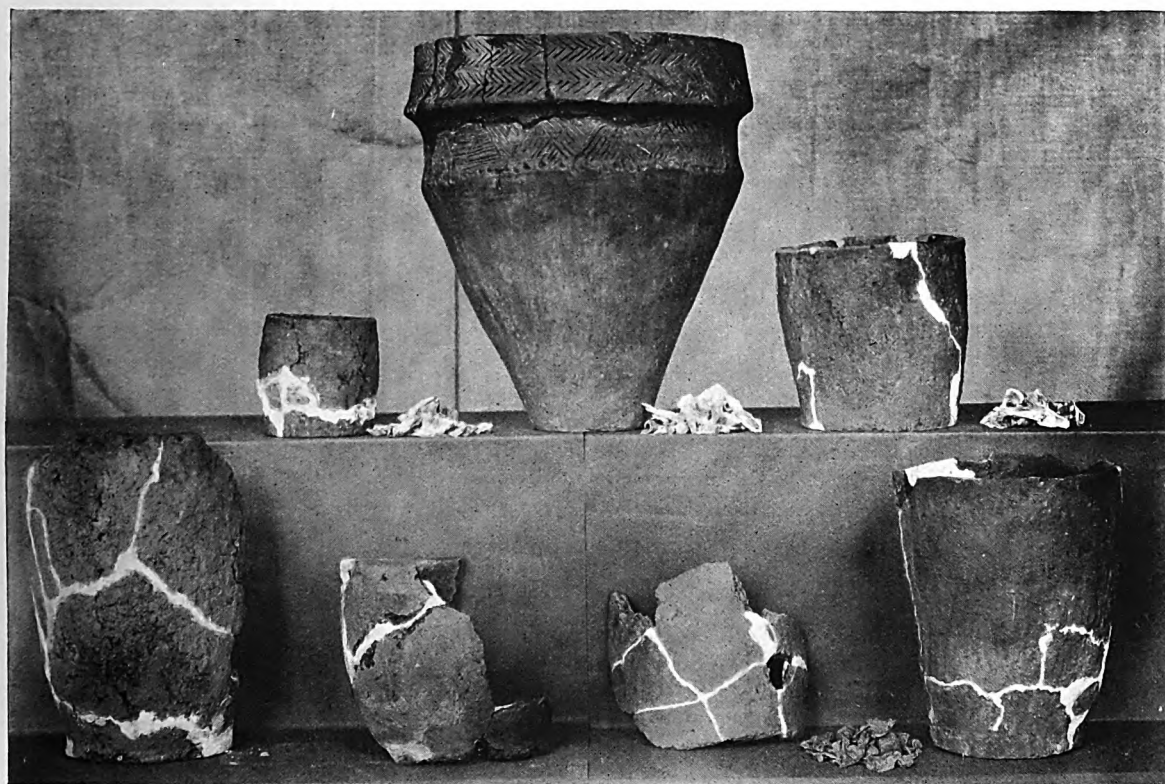


Fig. 2. Some of the urns after being restored.
(Photographed by Mr. W. Coulls Hampton.)

(1) A small flat-bottomed vessel slightly bulging in the middle; height $5\frac{1}{2}$ inches, diameter at mouth $4\frac{3}{4}$ inches, and at base $4\frac{1}{2}$ inches. (The left on upper row, fig. 2).

(2) Another, tapering a little towards the base; height 11 inches, diameter at mouth 9 inches, and at base $5\frac{3}{4}$ inches.

(3) A third measured $8\frac{1}{4}$ inches in height, the same in diameter at mouth, and $6\frac{1}{2}$ inches at base.

(4) A fragment indicated $13\frac{1}{2}$ inches in height, and $6\frac{1}{2}$ inches in diameter at base. Only a portion of the rim remained, and it was perforated with small holes about 2 inches apart.

(5) Another fragment, also perforated at the rim, was $7\frac{3}{4}$ inches in height, $8\frac{1}{2}$ inches in diameter at top, and $7\frac{3}{4}$ inches at base.

(6) One large fragment showed a slightly raised bead running round the body about 2 inches below the rim.

My attention was first directed to these interesting archaeological remains by a paragraph in a local paper, but on visiting the locality little remained to be seen except the dilapidated cist and its broken cover. The photograph reproduced in fig. 1, taken a few days after the demolition of the cist, shows two of the urns lying among some of the stones of which the cist had been constructed,



Fig. 3. An urn with overhanging rim, showing the position in which it lay in the earth.

(Photographed by Mr. W. Coult's Hampton.)

with the broken cover on the left. Other two urns are shown on the margin of the cist, one on each side of the riddle, and one to the right of the broken cover. The conical stone represented in the background was found resting on the cover, and regarded by the workmen as a weight to keep the latter in position.

On a subsequent visit I ascertained that another discovery had been made which considerably enhanced the importance of this unique burial cist. A man, while carting away some of the soil from the back premises, found a perforated stone hammer among the gravel, together with fragments of a cinerary urn. The

carter, on being interviewed, stated that it was only after picking up the stone hammer he observed some fragments of coarse pottery which, in appearance, he could hardly distinguish from the gravel. It was his opinion that the hammer was originally inside the urn before the latter had been broken by his shovel. These relics were then in possession of Mr. Taylor, and, on being told that I was anxious to see them, he very kindly brought them to my house that same evening, and obligingly allowed me to take a drawing of the hammer stone (fig. 4). A fragment of the pottery turned out to be a portion of the rim of a large cinerary urn, having a broad overhanging border ornamented with a zigzag pattern of incised lines, altogether different from the urns hitherto found in the cemetery. Subsequently, a few more urns of a similar type were unearthed in the vicinity of the covered cist, all of which are said to have been deposited in an inverted position in separate holes in the earth, as shown in fig. 3. By this time experience had taught the workmen that these vessels must be handled with the greatest care, but, notwithstanding all efforts in this direction, most of the urns fell to pieces in the act of removal. Two specimens, after being reconstructed under the supervision of Mr. Campbell and his assistants, are now exhibited in the Glasgow Museum. The more perfect of the two is shown in fig. 2, the middle urn on the upper row. Some other fragments, representing at least two more urns of the same type, have fallen into the hands of private collectors.

The cinerary urns now under consideration are differentiated from those found in the covered cist by the following characteristics, viz. an overhanging rim more or less ornamented with patterns of incised lines, a circumscribing hollow neck immediately beneath the rim, similarly ornamented, and a tapering body ending in a narrow or rounded base.

The dimensions of the two urns in the Museum are as follows:

(a) The diameters of no. 1 (see fig. 2) at mouth and base are respectively $14\frac{3}{4}$ and $5\frac{1}{4}$ inches; height $16\frac{1}{2}$ inches. The rim is 3 inches broad, and its surface is ornamented with two herring-bone patterns running parallel to each other. The constricted portion beneath is $2\frac{3}{4}$ inches broad and half an inch deep, and the ornamentation consists of a succession of triangular spaces filled in with incised lines.

(b) The overhanging rim of no. 2 (a fragment) measures 2 inches in breadth, and is ornamented with string-marks arranged in panels in which the marks are alternately horizontal and upright. The diameter at mouth is approximately $7\frac{1}{4}$ inches, and the height 9 inches.

As there was no systematic investigation of the ground, and no archaeological expert present at the exposure of any of the interments, there is a lingering suspicion that the perforated stone hammer might not be the only relic left by the

original owners of the cemetery. Nevertheless, the sepulchral phenomena thus casually brought to light are of the highest importance, especially when correlated with the contents of other prehistoric graves previously discovered in the neighbourhood.

It is to be observed that we are here dealing with a small cemetery of cinerary urns without any surface markings to indicate the position of the respective burials, such as cairns, mounds, dolmens, menhirs, etc. Cemeteries of this description, though apt to remain undiscovered, are not unfrequently encountered in field operations in many districts throughout Scotland. Mr. J. Fullarton, writing in 1858 in his introduction to Pont's *Topographical Account of the District of Cunningham*, thus describes an urn cemetery which will at once be recognized as a complete parallel to that at Largs:

The incineration of the dead would appear to have been of very general use among those aborigines, as is evident from the universal discoveries of cinerary urns which have everywhere been made through the country; nor do they seem always to have been covered by cairns or mounds, but are very frequently found simply sunk into the plain ground from two to three feet under the surface. In such cases, however, they are perhaps for the most part found to occupy slightly elevated and dry places. The woodcut here in the margin was engraved from a specimen of these interesting remains found a few years ago, close by the village of Highthorn, in the parish of West Kilbride. There was a considerable deposit of them at the place, but not many were so sound as to bear being removed. They were very variable in size—from about 15 inches in height down to about 6—the one here engraved measures 13 inches in height by about a foot in width at the brim.¹ They were all either of this pattern or plain in the form of a common flower-pot. No mound or cairn in this instance was found to cover the urns—the ground, to appearance, being quite smooth and in its natural form. . . . They all contained fragments of calcined human bones.

To dilate on the similarity between these two cemeteries is unnecessary, and, as the localities are only a few miles apart, we may accept the evidence here adduced as conclusively proving that this method of disposing of the dead was at least practised in this part of Scotland. The novel and exceptional feature in the Largs cemetery was the presence of seven cinerary urns in one small covered cist, all of which must have been deposited at the same time. It is difficult to suggest an adequate explanation of this fact; except by resorting to some kind of hypothesis, such as the occurrence of a sudden catastrophe which caused the death of a whole family.

¹ The urn figured by Mr. Fullarton belongs to the overhanging rim type and, except for its ornamentation, is precisely similar to the Largs specimen represented in figs. 2 and 3.

According to the chronological researches of the Hon. John Abercromby, the overhanging rim type is the oldest among cinerary urns, having its origin in the south-west of England.

"The oldest examples," he writes, "seem to be found in Cornwall, Dorset, and Wilts. In the two latter counties all gradations of form occur from the beginning to the end of the series, and two varieties of the type, when once developed here, retained their individuality to the last. It has several times been stated that there are no food-vessels in the south-west of England; and though this statement is not quite correct, they are certainly rare. One reason for this circumstance may be, that cremation began earlier in the south-west and south of Britain than further north; in fact, if Mr. W. Borlase is correct, no sepulchral pottery has been found in Cornwall except in connexion with cremated interments. . . . The diffusion of type I (those with overhanging rims) does not seem to have been the result of conquest, for, although the type extends from the English Channel to the Moray Firth, it is only found at present in 25 out of the 40 counties of England, in 5 out of the 12 counties of Wales, and in 18 out of the 33 counties of Scotland. This includes all the seaboard counties of England, except Gloucestershire and several of the Scottish counties that touch the sea. Early examples are also found in the three north-east counties of Ireland. The maritime habits of the inhabitants of the south-west may have had something to do with this uneven distribution."¹

The perforated stone hammer, though an interesting relic and of some chronological value, is not absolutely a new find among grave-goods. Compared with three other specimens, known to have been found in association with prehistoric interments, it is the largest. Made of crystalline trap-rock, called diorite, it has a mottled appearance and a highly polished surface. Its length is $4\frac{5}{8}$ inches, greatest breadth $2\frac{1}{2}$ inches, thickness 2 inches, and diameter of perforation 1 inch. The perforation, evidently intended for a handle, is in the centre, and presents a smooth uniform bore. Its orifice at one end is ornamented by two incised circles and the body tapers a little towards both ends, leaving working surfaces of about one inch in diameter (fig. 4). As instances of hammer stones having been found in analogous circumstances elsewhere the following may be mentioned:

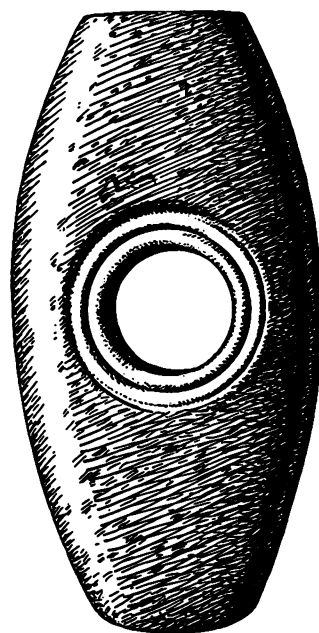


Fig. 4. Perforated stone hammer.

- (1) A perforated stone hammer, described as made of "hornblende gabbro", was

¹ *Proc. S. A. Scot.* xli. 187.

found along with three flint knives in one of the compartments of a chambered cairn in the island of Arran. Its dimensions, taking them all over, are about a third less than those of the Largs specimen, but, as regards material, form, and finish, the two implements are not unlike each other, except that the latter has the perforation nearer one end—which end is slightly smaller than the other.¹

(2) Another pretty little instrument, $2\frac{1}{2}$ inches long, and made of veined quartzite, is rounded at both ends, highly polished, and perforated in the middle. It was found along with a small urn of the food-vessel type in a cairn at Glenhead, near Doune.²

(3) A third specimen, made of grey granite, is 4 inches long, finely polished, rounded at both ends and tapering at one extremity to half the size of the other. It lay among the *débris* of a thick bed of burnt bones and ashes on the floor of one of the chambered cairns of Caithness.³

There is nothing in the circumstances under which all these hammers were found to militate against the supposition that they are genuine relics of the Bronze Age. Indeed, the opinion that they really belonged to that Age is supported by the fact that, among the very few grave-goods recovered from these urn cemeteries, some of them were bronze objects. Dr. Joseph Anderson thus records the result of his experience with respect to five cemeteries of this class in one or two counties in Central Scotland:

In these five cemeteries, including an aggregate of seventy-four separate burials, there was nothing found deposited with the burnt bones, and their enclosing urn, except in one solitary instance. In other words, no implement, weapon, or ornament occurred with seventy-three urns, while two bronze blades occurred with the seventy-fourth.⁴

Other prehistoric burials found in Largs.

We now proceed to discuss briefly the bearing of the two following graves which formerly existed within the boundaries of the town of Largs, with the view of throwing some further light on the chronological sequence of the different burial customs of our early forefathers during the prehistoric period.

The Haylee Stone Cist.

In January, 1906, a stone cist was uncovered on the east side of the Irvine Road, immediately below a commanding site (a little to the north of Haylee House) on which formerly stood a great cairn, and of which a remnant of its megalithic chambers still remains *in situ*. The cover of the newly-discovered

¹ *Proc. S. A. Scot.* xxxvi. 100.

² *Ibid.* xvii. 453.

³ *Ibid.* vii. 499.

⁴ *Ibid.* xiii. 113.

cist, a massive block of conglomerate, and lying some 2 feet under the surface, had to be broken before it could be removed. The interior of the cist measured $4\frac{1}{2}$ feet long, $2\frac{1}{2}$ feet wide, and 2 feet deep. Its walls were constructed of flags of red sandstone set on edge and partly arranged in a double row, in which latter case the intervening crevices were said to have been stuffed with clay. Inside the cist were the remains of a human body, apparently in a sitting posture, and an urn of the beaker type, both of which had been badly damaged by the breaking up of the stone cover. Only a few fragments of the beaker were collected, the largest of which was submitted to the Hon. John Abercromby, who thus describes its principal features:

When whole the beaker must have had a maximum diameter of about 17 cm., a height of about 22.9 cm., and it seems to have belonged to type β , i.e. ovoid cup with re-curved brim. Although such a height is unusual, it occurs with two beakers of the same type from Court Hill, Dalry, Ayrshire, from Largie, Poltalloch, Argyleshire, and on a beaker of type γ , i.e. low-brimmed cup, from Collessie, Fife. . . . So far as I judge, this fragment belonged to a beaker that may be placed about the middle of the Beaker period.¹

Of the skeleton only the skull came into the hands of experts. The following is an extract from a report by the late Professor Cunningham, Edinburgh, to whom it was sent for examination:

The evidence which the Hon. Mr. Abercromby has advanced to show that the beaker urn belongs to the most remote period of the Bronze Age has been the means of stimulating an increased degree of interest in the human remains which have been associated with this form of ceramic.

Dr. Bryce has gathered together the records of twelve crania, all found within the Scottish area, and each singly within a closed short cist, under conditions similar to those under which the Largs specimen was discovered. These crania exhibit a remarkable uniformity in almost all essential details, and one cannot help concluding that they are derived from a very homogeneous and distinct race. The Largs specimen (cephalic index, 84.5) conforms in a striking manner with this type. A very casual examination is sufficient to show, notwithstanding its damaged condition, that in it we have a combination of definite characters seldom, if indeed ever, encountered in association with each other in modern crania.²

The Haylee Cairn.

A writer in *Archaeologia Scotica*, in the course of observations on the Norwegian expedition against Scotland, and especially on the burial of the dead after

¹ *Proc. R. S. Edin.* xxvi. 293.

² *Ibid.* xxvi. 305.

the battle of Largs, thus describes certain sepulchral mounds then extant in the town of Largs :

Just without the churchyard wall there is a considerable cairn, where we may suppose a number of the Norwegian dead are buried. . . . The chronicle makes it pretty clear that this and the other cairns were raised over the Norwegians. Other five tumuli or cairns are marked on the sketch : three behind Brisbane Place, and the houses called the Crescent ; one farther up, and one behind the House of Haylee. In these have been found bones, pieces of silver, &c. The last-mentioned cairn may be considered the most remarkable. It has been uncovered by Mr. Wilson, the owner of the land, and it was found to cover a circular building of stones, having an opening on one side, with a kind of passage between two straight walls. In the centre was found the remains of a body, and around it of a number of others to the amount, it is supposed, of thirty. The centre circle was covered by a large round flat stone. The stone building still remains, but the earth that formed the mound upon it has been carried away.¹

The situations of two other cairns are shown, that were very lately removed for the sake of employing the stones in them for making roads. They were on the side of the road leading from Largs towards Haylee, and in the tract where, we have assumed, the chief part of the battle took place.

There are two cairns on the north side of the water of Gogo behind the village upon which Sir Thomas Brisbane has erected pillars for meridian points, to be seen from his observatory at Brisbane House. I have not learned that these cairns were ever opened ; and, as the Norwegian narrative does not imply that any part of the battle took place in this quarter, we are not warranted in supposing that they had their origin in Haco's operations.²

What remains of the Haylee monument is situated in the corner of a field near Haylee House, and presents the form of a dolmen or large covered cist. The cover-stone measures $7\frac{1}{2}$ feet long, $5\frac{1}{2}$ feet broad, and 15 inches thick, and rests mainly on the two side stones each about 7 feet long and 3 feet above ground. The enclosed space is about 6 feet long, 4 feet broad, and 3 feet high. Behind this chamber there seems to have been another chamber, now merely outlined by smaller stones, probably the broken bases of those which formed the original chamber. According to the description of this cairn, as quoted above, the present structure is a mere fragment of its former condition. It was locally known as "Margaret's Law", or "Haco's Tomb".

¹ A writer in a local guide says : "In it were found five stone coffins, two containing a number of skulls, besides other bones, and several urns. An immense quantity of bones was found in the cairn not enclosed in the coffins." I need not say that no one now believes that any of these cairns were the burial-places of Norwegians who were killed at the battle of Largs.

² *Archaeologia Scotica*, ii. 382, circa 1822.

Concluding Remarks.

The special features and chronological sequence of these different methods of interment may be thus summarized.

(1) The Haylee megalithic monument containing multiple burials by inhumation may be paralleled with the great chambered cairns of Wiltshire, Somerset, Gloucester, and some other adjacent counties, all of which were constructed by a long-headed (*dolichocephalic*) race. Similar chambered cairns have been found in Scotland, especially in the island of Arran, which have yielded skulls and other bones of this long-headed people. But, on the other hand, within the same geographical areas in Scotland, other chambered cairns have been found which contained burials after cremation and which, of course, supply no data for determining the physical or racial characters of their constructors. It may be surmised from this fact alone that the early people of Scotland had not given up their primitive habit of burying their dead in great stone chambers, when the custom of cremation was introduced and spread rapidly over the British Isles. This custom appears to have been the outcome of strong religious convictions which divided the people into two categories, viz. those who adhered to the old system of burial, either in the earth or under a cairn, and those who adopted the new doctrine that it was necessary to free the soul at once from the corrupt body by the application of fire, before committing the remains to the grave. Although we have no positive evidence of the physical characters of the people who were buried in the Haylee cairn (their osseous remains not being recorded) we have presumptive evidence that they were of the same long-headed race who constructed the megalithic chambers in Arran, both descendants of the earliest inhabitants of Britain.

(2) The next immigrants into Britain were a tall round-headed race (*brachycephalic*) who introduced urns of the beaker and food-vessel types (supposed to contain some kind of semi-liquid food for the journey to the unseen world). These people buried their dead in short cists, and along with the body were generally placed a beaker or a food-vessel and some personal relics. As typical memorials of this kind of burial we have the short stone cist and skeleton on the Haylee ground, already briefly described, which presumably is of later date than the megalithic monument, although the two methods in later times might have been contemporary.

(3) The archaeological phenomena disclosed by the cremation cemetery, the latest of the prehistoric finds found at Largs, indicate a still later phase in the disposal of the dead, a phase in which the structural details of the grave are greatly simplified. The dead body, now regarded as a mere mass of corrupt matter, was first purified by fire, after which the calcined remains were buried in

a hole in the earth, frequently without being enclosed in a cinerary urn. The cairns, mounds, stone circles, and other surface settings which, in earlier times, so conspicuously marked the abodes of the dead, were now by a large section of the communities regarded as unnecessary. Although none of the earlier methods entirely died out, cremation seems to have been the predominating custom in the later Bronze and early Iron Ages, and continued to be so until the introduction of Christianity into Europe. The old funeral rite was soon found to be inconsistent with the new faith.

XI.—*The Album Amicorum.* By MAX ROSENHEIM, Esq., F.S.A.

Read 9th December, 1909.

THE Album Amicorum, or *Stammbuch* as it was called in Germany, where it originated, consisted of a collection of blank leaves of paper or vellum, sometimes kept loose, more often bound up as a book, the leaves being destined to receive the signatures and armorial bearings of the owner's friends and acquaintances; often the signatory added his motto or device, some classical or biblical quotations or sentences, some good advice, and a dedication. Generally speaking, the custom or fashion of the Album did not extend beyond Germany and Switzerland, and only few of them are met with in the Low Countries, Italy, and France. English Albums I have not met with, but at the British Museum (17083) there is a Scottish one to which I shall refer later on.

In 1893 Robert Keil published his and his brother Richard's researches on the subject, the chief material for which they found in the large collection of Albums in the grand ducal library at Weimar.

It is an admirable book, describing chiefly the various phases of the Album Amicorum of students at the German, French, and Italian universities in the sixteenth, seventeenth, and eighteenth centuries, quoting many remarkable mottoes, devices, and sentences, and giving some valuable information about the foundations, grants, and privileges of the German universities and the customs and morals of the students frequenting them.

In attempting to throw light on the origin of the Album Amicorum, these authors suggest that it is the outcome of the tourney book, or of the documentary proofs of noble descent and coat-armour required by the heralds from the knights entering the lists of the tournament, or the outcome of the *Wappenbuch*, the *liber gentilitii* kept by many noble families. They also state that the earliest Albums date as far back as the end of the fifteenth century and that by the time of the Reformation their use had become fairly general.

These are conjectures and statements not warranted by any material they had before them. By the aid of the fairly representative material before us here, and in the MSS. Department of the British Museum, I venture to make some suggestions as to their origin and to prove the earliest date of the Album.

As for the collections of heraldic and documentary proofs for use at tourna-

ments, and the early *Wappenbücher*, it is true that the latter were sometimes called *Stammbuch* or *Stammenbuch*, but there is not the slightest evidence or reason to connect them with the Album Amicorum except on account of the name *Stammbuch* applied to it at the time, and that name I venture to suggest may have been bestowed on the first of them by some students, scions of noble families who remembered the old *Wappenbuch* or *Stammenbuch* at home and wanted to possess and treasure something of the same kind whilst at the universities and travelling through the world. Here I have to lay particular stress on the fact that all the earliest Albums known to us were made up by students at the universities, Wittenberg in particular, and that they do not contain any coats of arms, but simply inscriptions of the owners' friends.

As Knod tells us in *Die deutschen Studenten in Bologna* in reference to the fourteenth and fifteenth centuries, and the Albums in reference to the sixteenth and seventeenth centuries, students and scholars did not restrict their studies to the learning and teaching of one university only; it was the custom after visiting one or more universities at home to travel, although travelling was not an easy matter then, to the foreign seats of learning, and to attend the lectures at French, Netherlandish, and Italian universities; hence we find in many of these students' Albums entries from Bourges, Orleans, Besançon, Paris, Louvain, Leyden, Padua, Bologna, Sienna, etc. Of course, the custom of attending foreign universities was not confined to the Continent: it was also in vogue amongst English scholars and students; thus amongst others we find Sir John Cheke, once the tutor of Edward VI, at Strasburg and Bâle, and in 1555 lecturing at Padua; another learned Englishman, Richard White of Basingstoke, a fellow of New College, Oxford, we meet with at Louvain, then at Padua, where he was created Doctor of Civil and Common Law.

Now, as to Keil's statement that the custom of the Album Amicorum dates as far back as the end of the fifteenth century, and that it had become fairly general at the time of the Reformation, this again must have been based on some misinformation or misconception, as no evidence whatever can be found in its support.

Beside the forty Albums and about five hundred loose leaves in my own collection here exhibited, I have searched the marvellous collection of Albums (there are about 400) in the MSS. Department of the British Museum, the catalogues of the Heraldic Exhibition at Edinburgh, and of the exhibition recently held at Leipzig in connexion with the University jubilee; I have made inquiries at Berlin, Weimar, and of Dr. Albert Figdor at Vienna, who owns an important collection, and I have also seen a MS. catalogue of the extensive collection, now dispersed, of the late Frederick Warnecke; but with the exception of one single specimen mentioned by him, containing inscriptions dated

1548 to 1568, I have not seen any of an earlier date than 1554. The specimen mentioned by Warnecke is a printed book, Melanchthon's *Loci Communes Theologici* (Leipzig, 1548), which its owner, Cristoph von Teuffenbach, whilst a student at Wittenberg University, had bound up with thirteen blank leaves at the beginning and ten at the end, and these leaves contain inscriptions only of his friends in the years 1548 to 1568.

Many of the earliest Albums were printed books, with or without woodcut illustrations, a number of blank leaves having been added at the beginning and end, or having been interleaved. The favourite books for this purpose were the Emblems of Andrea Alciati, of which between 1531 and 1570 alone as many as seventy-five editions had been issued at Augsburg, Paris, Lyons, and Frankfort, but chiefly at Lyons; other books of Emblems by Hadrian de Jonghe, Joannes Sambucci, Nicolaus Reussner, and others; and different editions of Holbein's *Dance of Death*, the *Biblische Figuren* of Virgil Solis and Jost Amman, etc. As I stated before, all these books were interleaved with blank leaves, but as early as 1558 there occurs the first book published expressly for the purpose of an Album Amicorum (plate XXI). It was produced under the title *Thesaurus Amicorum* by Jean de Tournes at Lyons, and is not dated, but cannot be later than 1558, as, according to Brunet, a second edition under a different title appeared in 1559. A certain number of its pages contain short sentences in many different languages and portrait medallions of celebrities of ancient history, in addition to those of Erasmus, Melanchthon, Nicolas Glenard, and Clement Marot; the remaining pages were left blank, but all are surrounded by very beautiful woodcut borders of three different styles, namely: (1) those with grotesque and free subjects, (2) arabesque borders in black on a white ground, and (3) others in white on a black ground.

These borders were formerly attributed to Geoffrey Tory, but they are probably the work of Solomon Bernard, called "le petit Bernard"; they occur again and again in issues of the Lyons printers of that period, and in my opinion some of the woodblocks for these borders, or woodblocks of similar design by the same master, have been used for impressing the arabesque ornaments on the celebrated Henri II. ware, now called *fayence d'Oiron*, of which some beautiful examples may be seen at the Victoria and Albert Museum.

As far as I have been able to discover, the next book issued for the purpose of an Album Amicorum without text but with woodcut borders is the Album of Eberhart ab Eltershofen (Bibl. Eg. 1189), which must have been published in or before 1571, as its inscriptions begin in that year; the woodcut border is probably by Joh. Züberlin.

The fashion of the Album having become more general in the seventies of the sixteenth century, artists and publishers came forward to supply books

specially designed for the purpose, containing woodcuts of religious or mythological subjects, and emblems or shields of arms of celebrated personages, such woodcuts facing either blank pages or pages with blank shields, intended to be illuminated with the arms and to receive the inscriptions of the owners' friends.

The most notable publications were :

I. *Flores Hesperidum. Pulcherrimae Graeciae comicorum sententiae, cum duplici eorum versione latina. . . .*

Staß oder Gesellenbuch. Mit vil schönen Sprüchen. . . . MDLXXIII.

Colophon: Gedruckt zu Franckfurt am Mayn bey Georg Raben, in verlegung Mathes Harnisch, Bürgers und Buchführers zu Heydelberg. MDLXXIII.

This book is in the British Museum (Bibl. Eg. 1195), and was used as an Album by Andreas Rümelin in 1576.

II. *Ain Newes unnd künstlich schönes Staß oder Gesellen Büchlein. . . . Hab ich David de Necker Formschneider von Augspurg . . . zugericht . . . im 1579 Jahr.*

Colophon: Gedruckt zu Wienn in Osterreich durch David de Necker, Formschneider Anno 1579.

III. "*Anthologia Gnomica.*" *Illustres veterum graecae comoediae scriptorum sententiae, prius ab Henrico Stephano, qui singulas Latine convertit, editae; nunc duplici insuper interpretatione metrica singulae auctae, inque gratiam studiosorum, quibus et variae scutorum natalitiorum imagines libello passim insertae usui erunt, in hoc Enchiridion v. CL. D. JOH. POSTHII, GERMERSH, Archiatri Wirzeburg, et P. L. auspiciis collectae a Christiano Egenolpho Fr.* MDLXXIX.

Colophon: Impressum Francofurti ad Moenum, apud Georgium Corvinum, Impensis Sigismundi Feyerabendij. MDLXXIX.

The woodcuts, costumes, and blank shields are by Jost Amman. This book has been interleaved for Johann Josias Kiesen of Waiblingen, and contains inscriptions and the arms of his friends in the years 1590 to 1594. The following is an example of one of the entries. At the head of the page, above the shield, is written:

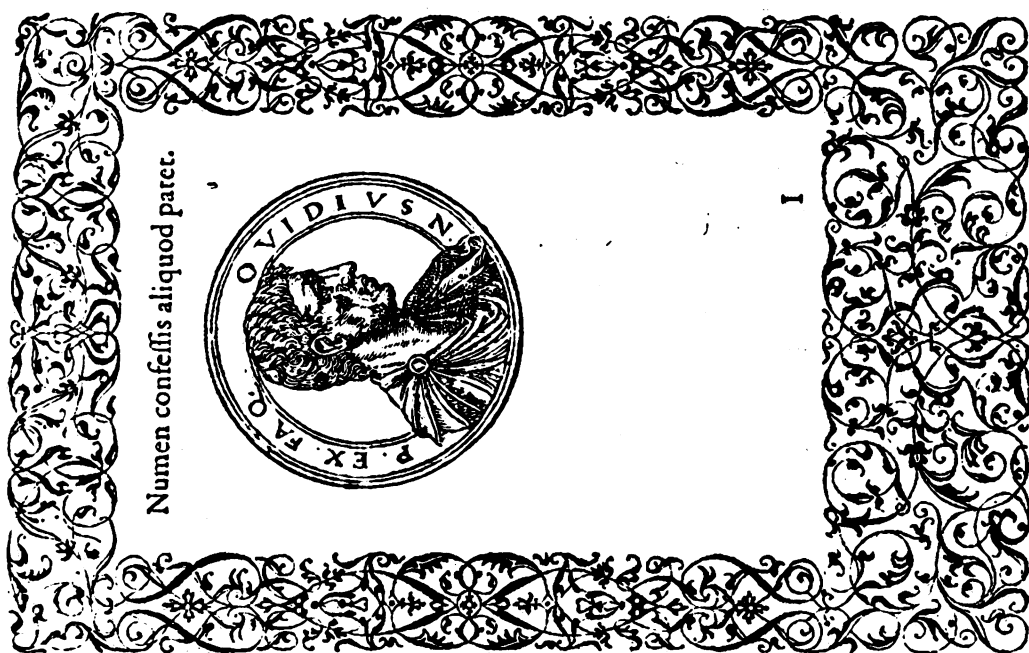
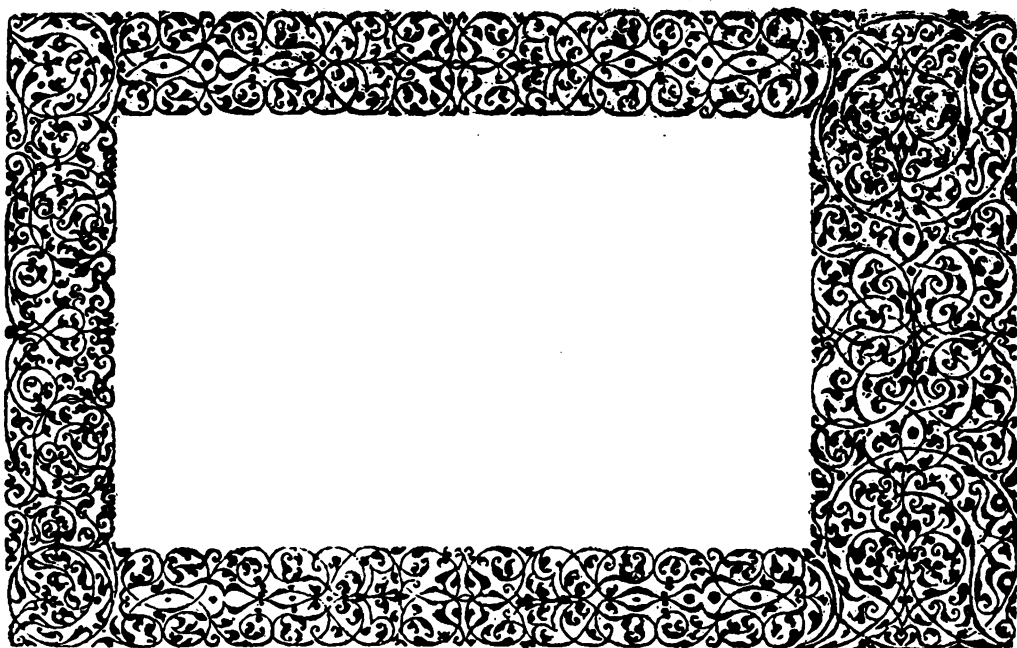
"An Gottes Segen, is Als gelegen"

1594

The shield bears: *per fess azure and bendy of six gules and silver, in chief a griffin passant gold*, and below is the inscription: "Zu freuntlicher Gedechnuss Georg friederich Röm. Kay. May. Hardtschier. Regenspurg d. 6. 7^{bris}." (The Hartschiers were His Majesty's bodyguard.)

Another copy of the *Anthologia Gnomica*, belonging to our Fellow, Mr. Emery





THESAURUS AMICORUM, c. 1558
Published by the Society of Antiquaries of London, 1910

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Walker, has been used as an English armorial, and some of the blank shields have been blazoned with English arms about the beginning of the seventeenth century.

A German edition of these woodcuts with different text appeared in the same year under the title:

IV. *Stam̄ oder Gesellenbuch. Mit vilen schönen Sprüchen auch allerlei offnen und bürgerlichen Schildten und Helmen. Allen Studenten und sonst guten Gesellen, so entweder ire Wapen, Reimen und Sprüch, zur gedechtnuss einander verlassen wollen . . . Durch einen Studiosum zu Franckfurt am Mayn . . . 1579.*

Colophon: Gedruckt zu Franckfurt am Mayn bey Georg Raben in verlegung Sigmund Feyrabends MDLXXIX.

Of this edition I only possess eleven leaves, with autographs dated 1585 to 1587 and the blank shields illuminated with the signatories' arms.

A second edition appeared in 1583 under the same title but with the Colophon: Getruckt zu Frankfurt am Mayn durch Peter Schmidt in Verlegung Sigmund Feyrabends.

A copy of this edition is in the British Museum (Bibl. Eg. 1216), interleaved with blank flowered paper for Hanns Brunhofer of Iglau, and contains a few miniatures, shields of arms, and inscriptions of his friends at Prague dated 1592–1597.

V. *Insignia sacrae Caesareae Majestatis, principum electorum, ac aliquot illustrissimarum, illustrium, nobilium, et aliarum familiarum, formis artificiosissimis expressa . . . His adjecta sunt totidem vacua (uti appellant) scuta . . . Omnia in gratiam studiosorum . . . Francofurti ad Moenum MDLXXIX.*

Colophon: Impressum Francofurti ad Moenum, apud Georgium Corvinum, impensiis Sigismundi Feyerabendii. MDLXXIX.

This book contains woodcuts by Jost Amman of arms, costumes, mythological subjects, and blank shields. My copy has been interleaved for Heinrich Schott and contains only one inscription, dated 1602.

In the same year (1579) appeared a German edition under the title:

Stam und Wappenbuch hochs und niders Standts, Darinnen der Romischen Keys. Mt. dess heiligen Röm. Reychss Churfürsten, Fürsten, Grafen, Freyen und Herrn, Auch deren vom Adel, und anderer vom gutem Geschlecht herkommenen Personen, Wapen mit iren Schildt und Helmen . . . eygentlich und auffs fleissigst zugericht. Mit angehengten vilen ledigen Schildten und Helmen . . . Zu nutz und ehren allen der Kunst Liebhabern, Gelehrten und Ungelehrten . . . durch Sigmund Feyrabend. Gedruckt zu Franckfurt am Mayn . . . MDLXXIX.

A second German edition appeared in 1589 with only slight differences; on

fo. 4 verso is a woodcut with the elector of Saxony on horseback, and the numbering of the pages in black-letter and Arabic numerals.

VI. *Cato : sive Speculum morale ; Privatum vitae genus concernens : quod in locos suos redactum, et tam Planudis Graeca, quam rhytmorum vernacula versione expolitum, instar ALBI AMICORUM se habet.*

Sittenspiegel Catonis : Das menschliche privat Leben betreffend, in ein richtige Ordnung gebracht, und sowol in Schulen als anstatt eines Stammbuchs zugebrauchen.

In Zoilum :

Me mea delectent, tua te, sua queng inuabunt,

Sic tua nec curae sunt mihi ; redde vices.

Francofurdi, Apud Joannem Wechelum MDLXXXV.

Colophon: Francofurti, Apud Joannem Wechelum MDLXXXV.

This book (British Museum 27579) has been interleaved for Johann Cellarius of Nürnberg, and contains the arms and inscriptions of his friends, many of them Nurembergers, dated 1599–1606; on p. 88 is a fugue by John Dowland, the composer, signed: "Jo. dolandi de Lachrimae his own hand." This inscription has already been mentioned by our Fellow, Mr. W. Barclay Squire, in his article on John Dowland in the *Dictionary of National Biography*.

On p. 118 is an entry by Nic. Taurellus, a well-known professor of medicine at Altdorf, dated 1599. By this Nicolaus Taurellus we have a book, printed for the purpose of an Album, under the title:

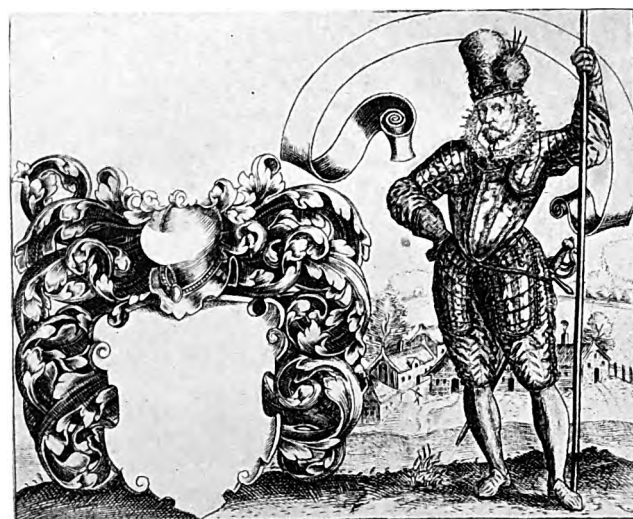
VII. *Emblemata physico-ethica, hoc est, Naturae morum moderatricis picta praecepta . . . Noribergae Excudebat Paulus Kaufmann MDXCV.*

The backs of the woodcuts, which are copies after Jost Amman, have been left blank for inscriptions. Brunet only mentions two later editions of 1602 and 1617.

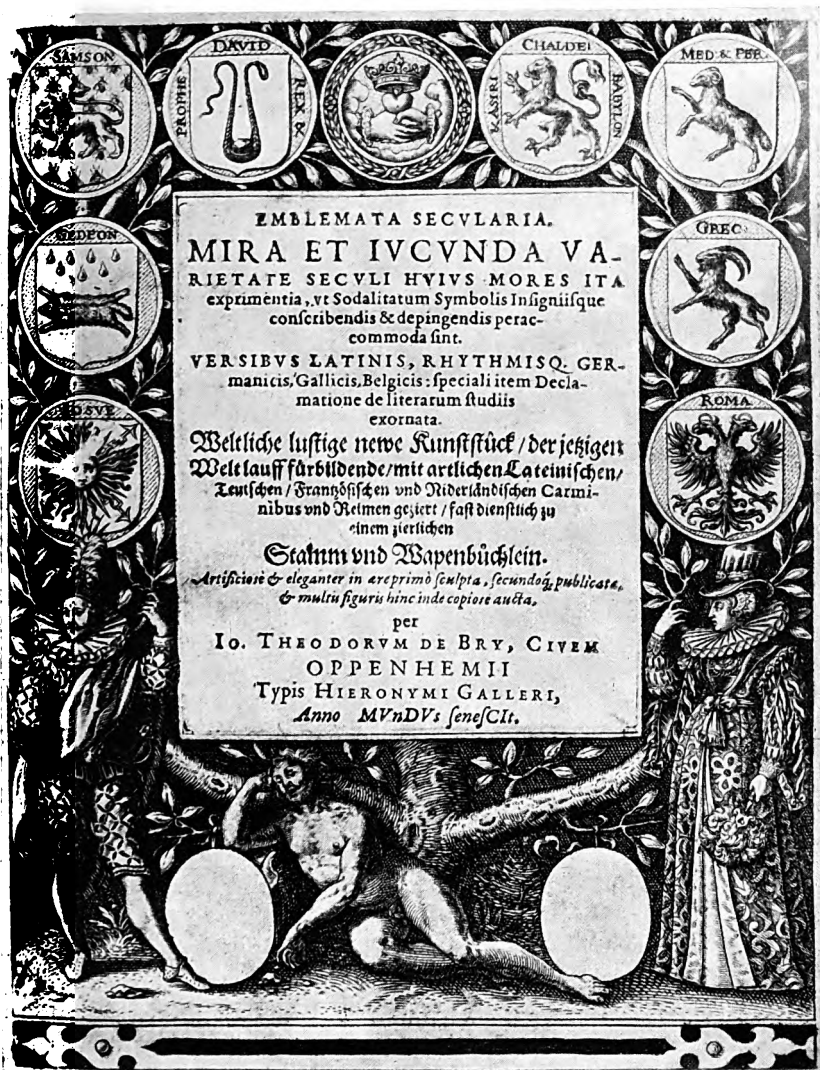
Another copy of the first edition is at the British Museum (Bibl. Eg. 1230), interleaved for an Album of Andreas Schopper of Nuremberg, and contains inscriptions of his friends at Altdorf in the years 1603–1621.

All the books hitherto mentioned contain woodcut illustrations only, but the following, issued as Albums, have copperplate engravings, the most artistic ever published for that purpose; they were engraved and published by Theodore de Bry, born at Liège in 1528, a goldsmith and engraver who came in 1570 with his two sons, Johann Theodore and Johann Israel, to Frankfort, where he established himself as an engraver, bookseller, and publisher.¹

¹ He, his sons, and Mattheus Merian, the son-in-law of Johann Theodore de Bry, were the engravers, editors, and publishers of the *American, African, and Indian Voyages*, 1590–1634, and to make arrangements for these publications Theodore de Bry, and probably his son Johann Theodore, came to London in 1586; on a second visit, 1587–1588, he, or they, engraved the funeral procession of Sir Philip Sidney, after the designs of Thomas Lant, Portcullis pursuivant.



1. THEODORE DE BRY, 1592



2. JOHANN THEODORE DE BRY, 1611

ENGRAVED TITLES, ETC. BY THEODORE AND JOHANN THEODORE DE BRY

Published by the Society of Antiquaries of London, 1910

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Theodore de Bry's first Album (plate XXII. 1) appeared in 1592 in oblong duodecimo under the title:

VIII. *Emblemata nobilitati et vulgo scitu digna: singulis historiis symbolu adscripta et elegantes versus historiam explicâtes. Accessit Galearũ expositio, et disceptatio de origine Nobilitatis. Omnia recens collecta, inventa, et in aes incisa a Theodoro de Bry Leodiense.*

Stam und Wapenbuchlein wolgestelte und künstliche figurn, sampt derẽ Poetischẽ erklarung, auch vō Adels ankũfft beid für Adelsperson, undt allerhandt Standt, vō newem in Kupffer gestochen, durch Dieterich von Bry Leodieñ.

IX, X. A year later, in 1593, Theodore de Bry issued two further editions (plate XXIII), but the oblong duodecimo had now become an octavo by the addition of borders of marvellous design and ornamentation, betraying the hand of the goldsmith.

The differences in the two editions of 1593 are slight; the engravings were left untouched, but some careless spelling in the printed text was corrected and a different type used in the later edition.

In the British Museum (Bibl. Eg. 1224) is the Album of an unknown person containing all the engraved blank shields and one subject plate, No. 16 of the 1592 edition, with a few inscriptions dated at Altdorf in 1599; there are also two perfect copies of the 1593 early edition, one of them (Bibl. Eg. 1539) used as an Album by Martin Hillinger, junior, in the years 1600 to 1607, and the other (Add. 19477) by Daniel Rindfleisch, M.D., of Breslau, in 1602 to 1619.

In 1596 Johann Theodore and Johann Israel de Bry, who were associated with their father as engravers, publishers, and booksellers, issued another Album of which I have not yet seen a copy, but I understand that its second edition of 1611, which I am exhibiting (plate XXII. 2), is almost identical and differs from it in small details only, such as renumbering of plates, and the mention of the name of Johann Theodore de Bry only, without that of his brother Johann Israel, who had died in 1611; it is called:

XI. *Emblemata Secularia. Mira et jucunda varietate seculi hujus mores ita exprimentia, ut Sodalitatum Symbolis Insigniisque conscribendis et depingendis peraccommoda sint. Versibus latinis, rhythmisq. Germanicis, Gallicis, Belgicis: speciali item Declamatione de literarum studiis exornata.*

Weltliche lustige neue Kunststück, der jetzigen Weltlauff fürbildende, mit artlichen Lateinischen . . . Reimen geziert, fast dienstlich zu einem zierlichen Stamm und Wapenbüchlein. Artificiosè et eleganter in aere primò sculpta . . . per IO THEODORUM DE BRY, CIVEM OPPENHEMII Typis HIERONYMI GALLERI, anno MVNDVS senescit (1611).

Its engravings are not so fine as those of the 1593 Album; the subjects depicted, some a little coarse, others rather free, simply represent the culture, morals, and humour of the period, and in his preface the author avers that his reason for depicting them was not to make the godless worse, but to improve their morals by depicting things he wished them to avoid.

A third edition appeared in 1614 under the title:

Pourtraict de la Cosmographie morale, c'est à dire une centurie des plus belles inventions . . . pour presenter et corriger les moeurs. Francfort. J. Theodore de Bry. 1614.

and a fourth in 1627 by Wilhelm Fitzer of Frankfort, who after Johann Theodore de Bry's death in 1623 appears to have taken over his publishing business.

These are the most important engraved Albums; it would take me too far to describe here the large number of other books printed for the purpose in the seventeenth century. Many of them are not only poor works of art, but their text coarse and indecent; a few exceptions are:

XII. *Viridarium chymicum, d. i. Chymisches Lustgärtlein, mit Poetischen Gemälden in Kupfer gestochen, so zu einem Stammbuch sehr dienlich . . . durch Daniel Meissner . . . Frankfurt, Lucas Jennis, 1624.*

This book has been used as an Album by Samuel Crämer, a medical student of Leutschau, and contains inscriptions of his friends at Dantzic, Königsberg, Magdeburg, Leipzig, Wittenberg, and other places in the years 1635 to 1639.

XIII. *Thesaurus Philo-Politicus hoc est: emblemata, sive moralia politica, figuris aeneis incisa ad instar Albi amicorum . . . inventione Dan. Meisneri. . .*

In eight parts with about 400 engravings by Mattheus Merian; Frankfurt am Main: Eberhart Kieser, 1624-1626.

XIV. *Thesaurus Sapientiae civilis . . . Opusculum . . . loco Albi Amicorum . . . conscriptum à Daniele Meichsnero . . . Francofurti, 1626.*

In some of the earliest Albums, the interleaved printed books, we do not find any shields of arms, but only inscriptions consisting of some motto or device, classical or scriptural quotation with a signed dedication, and sometimes the mottoes and devices were only expressed by the first letters of the words composing them. These mottoes and quotations were of infinite variety: they were Latin and Greek, classical or scriptural, Hebrew texts of the Old Testament, original compositions of a moralizing nature in poetry and prose, witty, humorous, often coarse and sometimes obscene, especially in the seventeenth century.

Although the Album Amicorum was chiefly in use amongst students at the universities, it had gradually become a fashion in wider circles: amongst the

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owners we find princes and nobles, high officials, ecclesiastics, and soldiers; physicians, lawyers, and teachers; painters, musicians, merchants, and artisans. A curious calling is represented by the owner of an interleaved copy of Joannes Sambucci's Emblems, who styles himself "Pest Barbier Gehülfe", that is "Assistant to a Plague Barber Surgeon".

There is also the Album of a Court and Field Trumpeter of the Elector of Mainz, where we encounter the signatures of nearly all the field trumpeters of the Holy Roman Empire.

The armorial bearings in the Album Amicorum are often beautifully drawn and illuminated, and make us desirous to know more of the artists who painted them. Keil¹ suggests that they were roving painters, travelling from court festivity to court festivity, from tournament to tournament, to paint there the arms of princes, nobles, and knights, to whom the Album, after dedication and signature had been entered, was handed to add the coat of arms.

But this again is a fanciful theory and cannot be upheld. In the fifties of the sixteenth century, the time of the earliest Albums, the tournament was a thing of the past and only occasionally revived as a pageant.

It was the custom for artists and craftsmen to travel and work abroad before becoming certified masters and members of their guilds, and some of these travelling artists may have had a share of the work, but generally speaking I must assign it to professional painters, limners, or illuminators, established in almost every important place, whose profession it was to illuminate the manifold documents of their period, official or otherwise, such as patents of nobility, grants of arms, and other privileges.

In Germany they were called *Briefmaler* and *Illuminirer*: they often were *Formschneider*, that is, wood engravers, who kept shops or stalls where they sold their illuminated woodcuts and broadsides. In Nuremberg alone, between 1550 and 1600, I can trace more than fifty of these professional illuminators, and in some Albums which I shall presently describe we find some of their monograms on the shields of arms; for instance, M. W., S. K., D. N. (probably David de Necker), H. W. (probably Hans Weigl), and G. M. (Georg Mack of Nuremberg), of whom we shall presently see in a Nuremberg Album a personal inscription with an illumination showing his shield, *per fess his housemark*  and the arms of the guild of painters, *gules three silver escutcheons*. Are not these arms of the painters' guild very significant? Nothing could show more pointedly that their original occupation was the painting of arms.

In connexion with the painting of these shields of arms I have to enter on the somewhat sordid but quite important question, who had to pay the artist? Was it the owner of the Album or his friend? I think it was the latter, and imagine

¹ *Die Deutschen Stammbücher*, R. and R. Keil, p. 6.

the *modus operandi* to have been as follows: At or after a pleasant meeting the friend, after inscribing his motto or quotation, dedication and signature, and having left a space for his arms, would hand it back to its owner with a sketch for the arms, accompanied by a certain amount of ducats, thalers, or florins, measured by his opulence and position, and in accordance with the more or less elaborate work required, requesting him to have the arms filled in as soon as opportunity allowed. As a rule this was properly carried out, but often, too often, these spaces were left blank and never filled in, although in many instances the dedication expressly mentions that in memory of everlasting friendship N. N., the friend, had had this shield of arms painted. For instance, the inscription (Album Amicorum Gros, fo. 68) "Nobili et ingenuo adolescenti Ernesto Gros, Pfersfelder Dicto in perpetuam sui memoriam haec sua insignia pingi curavit Carolus Philippus de Welder" is not accompanied by the arms.

The omission may be explained in two ways; either the friend forgot to hand over the necessary ducats, thalers, or florins, or the owner had received them and absent-mindedly spent the money in a more congenial way. I believe the one thing happened as often as the other.

Occasionally we find in the Albums portraits and shields of arms in wood-cut or copperplate engraving by Virgil Solis, Jost Amman, Tobias Stimmer, Hans Sibmacher, and other artists, illuminated or in their original state, and bearing, either in a cartouche forming part of the engraving, or on its margin, the autograph motto, dedication, and signature of the contributor. These engravings were often used by their owners as bookplates, but on the other hand some of them, described in certain *Ex libris* collections as "very rare" or "not described by Warnecke", were not engraved for that purpose and probably were made for men who never cared for the possession of a book.

Particularly amongst the rich patricians of Augsburg and Nuremberg the Album was in great favour, and if we had a catalogue of all the specimens existing, we should find that a large proportion was owned by them; and furthermore we should meet with only few Albums that did not contain the arms of either an Imhof, Haller, Kress, Holzschuher, Pömer, Welser, Ölhafen, Harsdorfer or other patricians of Nuremberg, or a Fugger, Welser, Rehlinger, Langenmantel, Ilsung, Paumgartner, or other patricians of Augsburg. The reason is not far to seek; in the first half of the sixteenth century the bankers and merchants of Augsburg and Nuremberg were the most important in the world, having establishments and factories everywhere, and accumulating enormous fortunes, especially the Fuggers and the Welsers, who often supplied the monarchs of Europe with the sinews of war, and were the Rothschilds and Morgans of their period. Is it to be wondered at, that their scions in the second

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half of the century, whilst visiting the universities and travelling over the world, should be singled out as particularly worthy subjects for the Album? In one Album at the British Museum (Bibl. Eg. 1553) there are not less than seven inscriptions with arms of different Fuggers, and there are only few of this period that do not contain the arms and inscription of either a Fugger, a Welser, an Imhoff, or a Tucher.

Autographs of King Charles I. occur in six different Albums, four of them of foreign visitors to England, the fifth that of Sir Thomas Cuming, and the sixth that of Charles Louis the Elector, and they are all accompanied by the significant motto: "Si vis omnia subicere subice te rationi." In 1609 (Sloane 3415) he signed: Ebor-Albanæ D.; in 1613 (17083) the motto and signature Carolus P. faces a painting with his portrait and the arms of England with a label, surrounded by the Garter; the entries of 1616 (15736 and Bibl. Eg. 1220) and 1618 (Bibl. Eg. 1257) bear the signatures Carolus P. and the entry of 1626 (King's 436) is signed Carolus R.

One need hardly point out that in the arrangement of the Album due respect was paid to rank and station; thus we find the entries of princely personages always at the beginning, followed in carefully considered gradations by those of counts, barons, nobles, knights, and commoners, and towards the end the autographs of people considered to be of lower rank or estate.

Having seen so many signatures of the sixteenth and seventeenth centuries, may I suggest an explanation for the origin of the flourishes attached to signatures, and which we consider either a meaningless addition or a special precaution against forgery or an attempt at ornamental decoration? I consider them the outcome of the words *manu propria* added so often and in countless varieties to the signatures, and a glance at a number of them, all with the words *manu propria* or their abbreviation twisted into different shapes and flourishes, will prove my contention (plate XXIV).

The owner of an Album did not lose interest in his book with advancing age; on the contrary, we find in many of them his personal notes showing that from afar he followed his friends' careers with keen interest. For instance, "Hic jam est Archiepiscopus Salisburgensis"; then again, when he received news of his friend's demise, he added a cross with such remarks as "Gnad Dir Gott", "Gnad ihm Gott", and sometimes he added particulars of his friend's death, like "Obiit Venetis 1601" or "Blieb vor Nördling 1634" (fell at the battle of Nördlingen 1634) (Album v. Brandt, f. 59).

I now proceed to the description of a number of Albums in illustration of what I have said.¹

¹ The references to the arms occurring in the Albums are abbreviated thus: R.=Rietstap, *Armorial General*, Gouda, 1887; S.=Sibmacher, *Neues Wappenbuch*, 1655-1667. Other abbreviations are B.M.=British Museum; R.C.=Rosenheim Collection.

No. I (B.M. Bibl. Eg. 1178). The Album of Johannes Spon (Span) of Augsburg is the earliest I have met with. It contains autograph inscriptions of his fellow students at Wittenberg in the years 1554 to 1559; one of the inscriptions on f. 6 and f. 7 is as follows:

Gut macht Mutt
Mutt macht Ubermuth
Ubermut macht Stoltz
Stoltz macht Krieg
Krieg macht Armuth
Armuth mehr thutt
Und dass macht wiederrumb Demuth
Bartholo: Thymeus, Wartenbrugsius
9 November 1554.

No. II (B.M. Bibl. Eg. 1179). A printed book, *Imagines Mortis*, Lyons, 1547, with woodcuts after Holbein, contains on its margins autograph inscriptions, dated 1555-1560, of the owner's friends. Amongst the inscriptions are the following:

f. B5 ^b .	15 - E - 55 "Ich wags Gott vollends" Ernst von Wirsberg
f. c4.	15 K 55 "Was Werden Will Wirdt Wol" Christoph Noël, Tyrol.

No. III (R.C.) The earliest book in my collection is a printed book, *Emblemata Andreae Alciati* (Lyons, 1548), interleaved for a student at the University of Ingolstadt; the first eight pages contain coloured drawings representing the arms of: I, the Papal See; II, the Holy Roman Empire; III, Albert, Duke of Bavaria; IV, Eberhard von Hirnheim, Bishop of Eichstädt and Chancellor of the University; V to VIII, the Faculties of Theology, Law, Medicine, and Arts. Then follow the signatures, mottoes or initials, and arms of the owner's fellow students, dated 1558 to 1560. An uncommon feature of this Album is that the signatures are placed within scrolls above the arms, instead of underneath, as was the ordinary practice. Amongst the entries are the following:

f. 14.	15. A. G. H. F. 59 . HK. Otto A Freyberg Arms (S. i. 83: R. i. 712)
--------	------------------------------------------------------------------------------

f. 45. Carolus and Raymundus Imhof
Arms (S. i. 206)

f. 118. Hanns Georg vō Gemmingen
E W D W
1559.

Arms: *azure two gold bars* (S. i. 122)

f. 174. Wilhelmus Comes Junior in Öting (Oettingen)
1559.

Arms: *Vairy gules and gold an escutcheon azure, over all a saltire silver* (S. i. 16: R. ii. 341).

No. IV (B.M. Bibl. Eg. 1182). A printed book: *In Evangelia quae usitato more Diebus dominicis et festis proponantur Annotationes Philippi Melanthonis, Recognitae et auctae ad finem aliquot Conciunculis. Wittebergae Ex officina Johannis Luft 1555*, to which twenty blank leaves have been added at front and back for Johann Klarner; it contains inscriptions dating from 1560 to 1607, amongst which are the following:

f. 2. Georgius Major (Professor of Theology at Wittenberg, friend of Luther and Melancthon).

f. 6. Martinus Lutherus tertius, 1560.

f. 11. Justus Jonas, 1561 (this is the son of Justus Jonas the reformer and Luther's friend; he was born at Wittenberg, 1525; became Professor of Law at the University; getting implicated in the "Grumbach" affair and outlawed he fled to Copenhagen, where, on the insistence of the Elector of Saxony, he was beheaded on the 28th June, 1567).

f. 20^b. Nicolaus Varnbulerus J. U. D. 1562 (a professor of law at Tübingen University).

f. 408. Lucas Osiander (the elder), Tubingae 1564.

f. 408. Marcus von Zinzendorff.

No. V (B.M. Bibl. Eg. 1184). One of the most interesting Albums I have seen, not only on account of its beautifully illuminated shields of arms with the monograms of the artists mentioned before, but also for the large number of inscriptions by learned men and notable Nuremberg people. It is the Album of Hieronymus Cöler of Nuremberg (plates XXV, XXVI) with inscriptions and the arms of his friends, fellow students, and learned men at Wittenberg in 1561-1562, Nuremberg and Ingolstadt 1563, Tübingen 1564-1565, Strassburg and Baden 1565, Augsburg 1566, Spires 1566-1570, Nuremberg 1571-1572, Vienna 1572-1575. Amongst the entries are the following:

f. 2^b. A coloured woodcut of St. Jerome (plate XXV. 1); at the base of the

tree between the initials G. M. with date 1571 is a shield *per fess gold and gules, in chief the housemark & sable and in base three escutcheons silver*. "Meinem günstig und altenbekannten Herren Jheronimus Cöler hab ich Georg Mack Illuminist Mitburger zu Nurmberg disenn Jheronimum Jn das Buch illuminiret mein im besten zu gedencken geschehen den 2 Dag October in 1571 Jar."

f. 5^b. Coloured woodcut portrait by Jacob Züberlein of Tübingen, whose monogram \mathbb{Z} is on the lower left corner. "Viva imago illustrissimi principis et domini Domini Nicolai Christophori Radziwil, Ducis Olicae et Nieswisi &c." Facing:

f. 6. 1565 Mensis Janu. 15

"Florentinus i. 3 ff. de Justitia et Jure. Cum inter nos cognationem quandam natura constituerit, consequens est hominem homini insidiari nefas esse."

Nico: Christ: Radziwyl Dux in Olika et Nies: Comes in Schidlowiecz manu propria scribebat Tubingae.

f. 8^b. Arms: *per fess flory gules and silver, in base a red rose* (S. ii. 73: R. ii. 286).

"VIVE VT VIVAS."

Wolffgangus Muntzer de Babenberg, Eques Auratus.

f. 9. Five sentences in Greek, Latin, Italian, and German.

Wolff Muntzer von Babenberg, Ritter
Jn aller Lieb unnd freundschaft
Im 1571 Jar

f. 15. Arms: *gold a right arm sable issuing from a cloud holding a frying-pan over flames, in chief a gold estoile* (R. ii. 426: S. ii. 161).

Signed with the initials of the artist: G. M. and 71 (Georg Mack, 1571).

"Mein Hoffnung zu Gott"

Anthonj Pfann 1571.

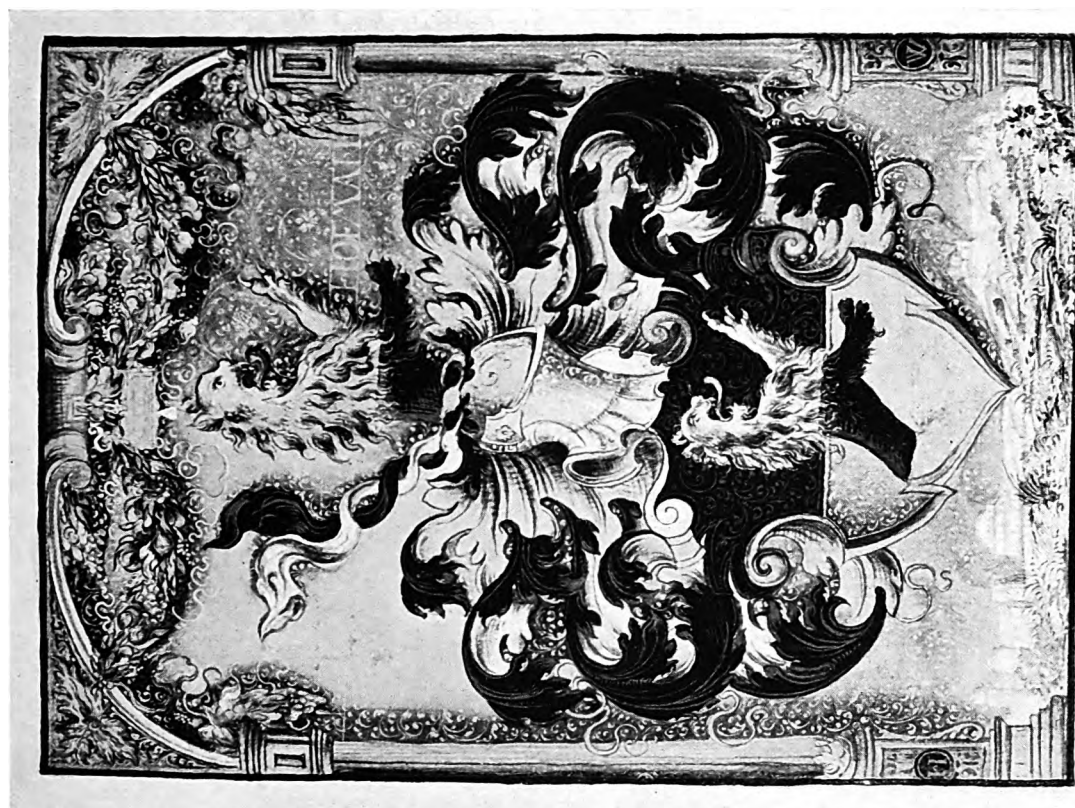
f. 15^b. Arms (S. i. 206: R. ii. 90) Mathias Löffelholz de Colberg.

f. 16. Arms (S. i. 205: R. i. 531) Georgius Tetzell 1571.

Both signed with the initials G. M. (Georg Mack).

f. 16^b. 1563

"Lieber Son sey frumb und thu Rechtt
Das du nitt seist der Sunden Knechtt
Gott soltu stetts vor augen han
und getrew sein bey Jederman
Red wenig, hörre aber vill
Vermeÿd fürwitz, bös gsind und Spill



2



Wassergewinnst und als am besten dem Interesse
 Coler gab ich georg made Thimmiest Wiedertager
 zu Wiedertager d. dem Thimmiest in der Stadt
 Thimmiest Wiedertager den besten zu werden den
 geistigen den 2. Tag Oktober 1521 Jar

I

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Vollsauffer, und all bösse stück
 so kanstu haben gutt gelück
 Betten dir auch bevolhen seÿ
 Das Gott der Herr erken dabey
 Das du In halttest für deinen Gott
 und er dich tröst in aller nott
 Solches als wünsch ich von Hertzen dir
 Wiltu weis sein, so folge mir
 Jheronimus Cöler Bürger und des
 Heilligen Römischen Reichs zu Nürmberg
 Statt Richter u. dein getreuer Vatter.
 meines Alters Im * 56 * Jar. Gott lob."

Note by the son: "Parens carissimus omnique reverentia venerandus, ex hac mortali, ad aeternam in vera fide ac filii Dei invocatione, emigravit vitam ultima Januarii Anno 1573 cum triduo ante absolverat annum sexagesimum sextum." Facing:

f. 17. Two shields accolé: I, *per fess counterchanged silver and sable in chief a demi-eagle and in base a wheel* (Cöler); II, *gules on a bend silver three red roses*, quartering Groland, Nützel and ? Schütz.

On f. 17^b and ff. are inscriptions and coats of arms of Barthol. Pömer, Wolff Pömer, Hieronymus Paumgartner, Anton Geuder, Caspar Tucher and Hans Tetzl, all of Nuremberg, dated 1563.

f. 28^b. An inscription.

Cyprianus Leovitius à Leonicia, Mathematicus
 6 May 1566. Augustae in comitiis subscripsit.

29 ff. Inscriptions dated 1563 and 1564, of Jacob Andreas, Provost and Chancellor of the University of Tübingen, Theodor Snepffius, Johann Brenlius junior, Johann Hochmann, Nicolas Varnbühler, Kilian Vogler, Samuel Hornmoldt, Valentin Voltz, Leonhard Fuchs, Johann Hyldbrand, all professors at the University of Tübingen.

ff. 65^b, 66. Inscriptions and arms: *gold on a bend sable an estoile between two gold crowns* (S. v. 217: R. ii. 593) Georg Roggenbach.
 Spira Nemetum 28 Octobris 1568.

f. 114^b. Beautifully written quotations in Greek, Latin, and German by Joh. Neudorffer junior, a celebrated writing-master at Nuremberg, with an inscription added in 1612, by his son Johann, a well-known physician, facing the shield of arms (plate XXVI. 1).

f. 115.

M . V . S . I . C . A .

"Nulla dies sine linea." M.D.LXIII.

"Festina lente."

Arms: *gold a double-headed eagle sable with a nimbus, dimidiated with sable two chevrons between three gold estoiles* (R. ii. 307) (plate XXVI. 2).

f. 155^b. Full-page arms of Hofman: *Per fess sable and gold a demilion rampant naissant to the sinister counterchanged* (R. i. 966) plate XXV. 2). On the pillars are the initials of the artist H. W. (probably Hans Weigl of Nuremberg).

Facing f. 156.

Inscription.

Hans Hofman, dein w. Schwager.

1565. M . F . I . E .

f. 158^b. Full-page shield of arms of Hess: *Sable a demi-man erased proper holding in his right hand a dagger, in his left a pair of gold callipers* (not in S. or R.). Facing this is an admonition in German verse by Mathes Hess to the owner, dated 1571, and below it a note in H. Cöler's hand: "Patronus ac Mecaenas studiorum summus, ex hac aerumnosa ad coelestem vitam evocatus. 14 Iunii, Anno 73."

No. VI (R. C.) The Album of Anton Walbott von Bassenheim is a printed book, *D. Andreae Alciati Emblemata* (Lyons, 1564), interleaved and bound for the owner whilst at the University of Louvain; it is in its original binding with A. W. A. B and date 1564 on front cover. The arms are finely drawn and of brilliant colouring. Amongst the entries are the following:

f. 23.

1565. "Noch ein Mall."

Arms (R. i. 485: S. i. 130).

Cuno Kratz von Scharpffenstein, den 13 November zu Löwen, allen zu Erhen.

f. 41.

15. S . E . A . 65.

Arms (R. i. 1118: S. i. 25).

Udalricus, Baron in Königseck et Aulendorff.

f. 52.

Arms (R. ii. 20: S. i. 108).

Georgius Christophorus Langenmantel.

f. 58.

1565.

Arms: *gold a millrind sable quartering silver three roses gules* (R. i. 899: S. i. 130).

Adolphus Hatzfeldt.

f. 72.

Arms (R. ii. 1064).

"W . D . H . W ."

Georg. Wejss 1564 Lovanij Mens. Octob.

EX SCRIPTIS HIERONYMI.

ΔΕΙ ΦΥΓΑΔΕΥΕΙΝ ΠΑΝΤΑ ΤΡΟΠΟΝ, ΚΑΙ
ΕΚΚΟΠΕΙΝ ΤΗΝ ΝΟΣΟΝ ΑΠΟ ΤΟΥ
ΣΩΜΑΤΟΣ, ΤΗΝ ΑΠΑΙΔΕΥΣΙΑΝ ΑΠΟ
ΤΗΣ ΨΥΧΗΣ, ΤΗΝ ΑΣΕΒΕΓΕΙΑΝ ΑΠΟ
ΓΑΣΤΡΟΣ, ΤΗΝ ΣΤΑΣΙΝ ΑΠΟ ΗΘ-
ΛΕΩΣ, ΤΗΝ ΔΙΑΦΘΟΡΙΑΝ ΑΠΟ ΤΗΣ
ΟΙΚΕΙΑΣ, ΚΑΙ ΚΟΙΝΗ ΑΠΟ ΠΑΝΤΩΝ
ΤΟ ΑΚΡΑΤΕΣ.

Seneca.

*unctis esto benignus; nemini blandus, paucis familiaris,
omnibus equus. ad teans tardus, ad misericordiam
promptus, in aduersis firmus, in prosperis cautus et
humilis.*

CATO.

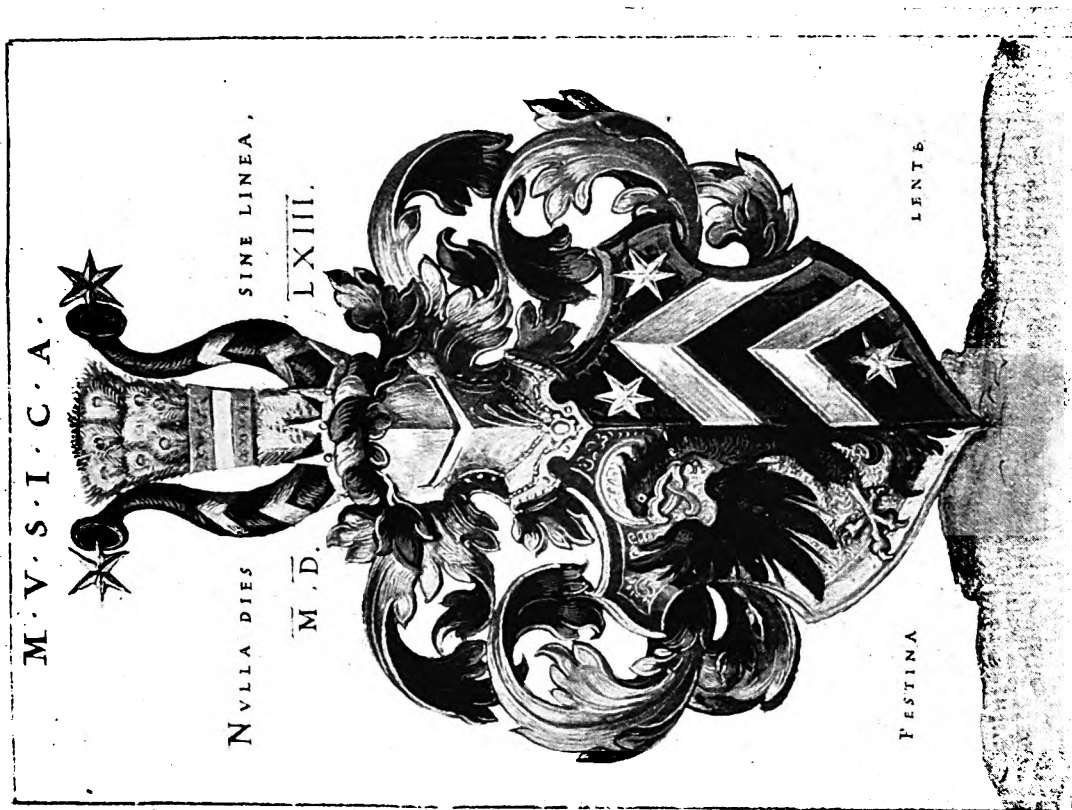
Du soll nicht Reichthum sehen an,
Denn du gern gut seinst nicht san.
Auf Gottes Focht, auf Zucht und Ehr.
Dus fründet sich schon nicht.

Strophi.

*Tempore viri boni in eorum precibus illo,
Si rectis finibus seculi esse potest.
Joannes fortis juvenis filius, D. C. 1672
Rasp. 1672: Homb. 1672: 1672*

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ALBUM OF HIERONYMUS CÖLER, 1561-1575
Published by the Society of Antiquaries of London, 1910

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f. 143. "Ferendum et Sperandum."

W. W. W. W.

Arms (R. i. 1085: S. i. 187).

Georgius Ketteler.

f. 146.

. 15. Æ. 66.

V. V. V. V.

Arms: *per fess counterchanged gold and gules in chief a ram's horn in base three estoiles* (R. i. 740: S. v. 90).

Johannes Guilielmus Ganzhorn, Franco.

f. 194.

15 * 65.

Unita virtus dissipata est fortior.

Arms (R. ii. 817: S. i. 111).

Joannes Dieboldus à Stadion amicitiae ergò scripsit Lovanij $\overline{\text{III}}$ Aprilis.

No. VII (B.M. Add. 18973). The Album of Andreas Tucher (fig. 1) of Nuremberg, of whom Biedermann says¹: "Andreas Tucher von Simmelsdorff, after having finished his studies, went in 1572 to Paris to attend the festivities held in honour of the King of Navarre's wedding, and his life was greatly endangered owing to the so-called 'bloody wedding' then taking place," meaning the night of St. Bartholomew. The inscriptions in this Album show us the universities he visited, and his itinerary to Paris; being dated at Nuremberg, 1566-1567, Strasburg, May, 1567-July, 1568, Wittenberg, August, 1569-August, 1571, Bourges, June, July, and up to 13 August, 1572, and then Paris "in festo Bartholomaei" (24 Aug. 1572). After his escape he went home, as the next entry is dated at Nuremberg, 8th March, 1573. Amongst the inscriptions and coats of arms we find those of many Nuremberg and Augsburg people, like Lazarus Spengler, An-

*Omnia sunt hominum tenui pendencia filo
Et subito Cassi quæ dâctæ ruit
+ hoc certo constat humanarum rerum nihil constare*

*Ornatiss: D. Andreas Tucher
Nurembergensi in sui
memoriam scribebat Fer-
dericus ab Alfeld & Lün-
telia Parisiorum in festo
Bartholomaei*

1572

Fig. 1. Album of Andreas Tucher.

¹ Translated from Johann Gottfried Biedermann, *Geschlechtsregister des Hochadelichen Patriciats zu Nürnberg, etc.* Bayreuth, 1784.

dreas Örtel, Jeremias, Philipp and Carl Imhoff, Johan Friederich and Anton Felix Welser, Paulus Koler, Joh. Conr. Vöhlín, Gabriel Nützel, Maximilian Veit Holtzschuher and many others, but the most interesting is on

f. 63. "Omnia sunt hominum tenui pendencia filo

Et subito casu quae valuere ruunt.

Hoc certo constat humanarum rerum nihil constare."

Ornatiss^o. D. Andreae Tuchero Noribergensi in sui memoriam Scribebat
Fridericus ab Allfeldt.

Lutetiae parisiorum in festo Bartolomaei.

1572.

The inscription of Frederic von Allfeldt (Alefeld, Ahlefeld) sounds very prophetic. Did he know that something was going to happen that night?

No. VIII (R.C.) The Album of Sebastian von Stamps, Vienna, 1571-1583, is one of the most important specimens I have met with, important for its exceptional size, its interleaved sets of rare engravings some of which are illuminated, and its beautiful drawings.

It is an oblong folio, a size unusual if not unique for an Album Amicorum, and consists of sets of copperplate engravings, representing biblical and mythological subjects, by Philipp Galle, Dirk Volkaert Cornhaert, Cornelius Bos and others, after designs of Martin von Hemskerk and Francis Floris; it has been interleaved with blank sheets of drawing-paper.

On the two calligraphic title-pages, prettily ornamented in gold and colour, the owner sets forth his intention to collect in his Album or "Gselln Buech", as he calls it, the signatures, arms, crests, or housemarks of his friends, inviting them to select amongst the engravings the subjects most congenial to their tastes or callings, to get these engravings illuminated, and to insert their signatures and arms on the pages opposite.

His friends responded with a will: many of the full-page paintings, illustrating their callings, occupations, or predilections, are evidently the work of good artists; one bears the monogram M. W. and another the monogram DN (probably David de Necker); every one of them contains the arms of the signatory more or less prominently displayed.

Some of the entries are:

f. 14^b. Arms, two shields accolé: I, *per fess azure and gules, over all a silver wall with a silver tower embattled from which rise three jets of smoke* (Reuchl; not in S. or R.). II, *gules a demi-lion gold* (Obersdorffer; not in S. or R.).

Monogram DN (probably David de Necker).

Martin Reuchl, der ungeugten Kinder zu Wienn auf gemeiner Rait Camer

24 ~ Duatt Bier Gott 24 +



1571-1583
Herzogin Elisabeth von Bayern

ALBUM OF SEBASTIAN VON STAMPS, VIENNA, 1571-1583
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Superintendent. Genad Dir Gott. Elisabeth Reuchlin, eine Obersdorfferin:
Uxor. Gott Hilft.

f. 29^b. Drawing representing the siege of a fortress.
Zacharias Stainegger Röm. K. M. Diener und Zeugwart zu Wien.

f. 35^b. A Camp scene showing the provisioning of troops and tending the sick.
Jacob Nagl Röm. Kays. Mt. Profiannttverwallter zu Raab. 1582.

f. 37^b. Battle against the Turks.
Arms (S. i. 38: R. i. 1012).
Hanns Jacob Hutter von Huttershofen. 1579.

f. 39^b. Drawing representing coursing the hare.
Arms: *silver a double-headed lion sable crowned and ducally gorged gold* (not in R. or S.).
Hanns Caspar von Pürckhamb. 1577.

f. 59^b. Drawing representing a vintage festival (plate XXVII).
Arms: *per fess azure and bendy azure and gold, in chief a gold estoile* (R. ii. 961: and 1 and 4 of S. iv. 189).
Abraham Underholzer von Salzburg. 1571.

f. 83^b. Herr von Cronsfeld. 1570.
Arms: *per chevron azure and gold three crowns counterchanged* (not in R. or S.).
Herr von Cronsfeld is represented full length facing a young lady, evidently his intended; by selecting a scene from the parable of the prodigal son for illumination he probably wanted to give the impression that he had sown his wild oats.

f. 86^b. Drawing representing a tournament. The trappings of the victor's horse are covered with playing cards and a figure of the prodigal son; the illuminated engraving opposite shows the return of the prodigal.
"Gott Hab Lob. 1571."

Arms: *azure a stork proper* (not in R. or S.).
Wilhallm Mair, H. Bairischer Quartiermeister zu diser Zeit.

f. 140^b. Drawing representing the enlistment of Landsknechts (plate XXVIII).
Arms: *per fess sable and barry silver and gules, in chief a crowned lion rampant holding a candlestick gold* (not in R. or S.).

Joseph Styczll, Must(er)schreib(er).

f. 161^b. Drawing representing a hunting scene.
Arms (R. ii. 377: and 1 and 4 of S. i. 214).
Mathias Paller, Augustanus, 1571.

- f. 189^b. Drawing representing hawking; monogram M.W.
Arms (R. ii. 351 : S. i. 55).
Christoff von Oppell, 1578.

At the end, inside the cover, is an inscription:

15 P. 79.

Abraham Strauss, Organist bei St. Stephans Khirchen in Wien.
"Tugent macht unsterblich."

No. IX (B.M. Bibl. Eg. 1189). The Album of Eberhart ab Eltershofen, which I have mentioned before, is in its original binding, and consists of blank leaves with woodcut borders probably engraved by Jacob Züberlein of Tübingen about 1570; it contains inscriptions, many with the arms, of the owner's friends, chiefly at Tübingen in the years 1571-1597, amongst which

f. 1.

1571.

"Spes mea est Christus."

Arms: *silver a chamois rampant sable crowned gold quartering gules a gold garb, over all on an escutcheon azure a gold lion rampant crowned* (R. i. 966 : S. i. 22).

Johannes Adamus Hoffman L. Baro.

Tubingae, 2 Julii 1571.

f. 2.

"Initium sapientiae Domini."

Arms: *bendy of eight gules and silver* (R. ii. 460 : S. i. 21).

Andreas Wolfgang Baro von Polhaim.

Tubingae 2 Julii 1571.

f. 15.

Arms (R. i. 839 : S. i. 100).

Wilhelm von Grumbach.

No. X (R.C.) The Album of Johann Baptist Buchxor contains autographs and arms of the owner's friends, students, and scholars, mostly German, at Bologna in the years 1571 to 1585, some accompanied by paintings; amongst the entries are:

f. 4.

1571.

D . D . A . N .

Arms: *per fess in chief per pale silver and gules in base azure* (R. ii. 689).
Martinus à Schaumberg et Wolfgangus Christophorus fratres germani.

f. 5.

1571.

F . F . F . F .

Arms: *silver three escallops gules* (R. i. 636 : S. i. 103).

Fridericus ab Eyb.



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f. 7.

1571.

"Quocunq. Ratio."

Arms: *azure on a bend silver three annulets azure* (R. i. 588).

Sebastianus Echterus à Mespelbrun.

f. 9.

"Anno Dñi MDLXXI."

M . A . R . I . A .

Arms: *azure two horns erased gold quartering gules three white eggs* (S. ii. 40: S. iv. 57).Alexander Eurialus (Eyrl) Ambergensis, Comes Palatinus, et J. U. Doctor.¹

¹ As to the privileges of a "Comes Palatinus" or "Hof-Pfalzgraf" I quote here (from Dr. von Hartmann-Franzenshuld's *Deutsche Personen-Medaillen des XVI. Jahrhunderts*, Wien, 1873) a document granting the title of "Comes Palatinus" to Friedrich Altstetter, a doctor juris, and setting forth the rights and privileges he is entitled to.

I. "Kann er taugliche Personen zu notaren, öffentlichen Schreibern und Richtern creiren, welche im ganzen h. römischen Reiche Befugniss haben, doch soll er sie anstatt der kaiserlichen Majestät in Gelübde und Eid nehmen."

(He may appoint suitable personages as notaries, public writers and judges, which will be recognized throughout the Holy Roman Empire, but instead of his Imperial Majesty, he himself will have to take their fealty and oath.)

II. "Hat er die Macht, Personen beiderlei Geschlechtes zu legitimiren (Fürsten, Grafen und Freiherren ausgenommen) und sie vom Mackel unehelicher Geburt zu dispensiren."

(He has powers to legitimate persons of both sexes (princes, counts, and barons excepted) and to free them by his dispensation from the ban of illegitimate birth.)

III. "Er mag Vormünder, Curatoren und Pfleger bestätigen, einsetzen und absetzen, Söhne und Töchter adoptiren ('heisst wohl Adoptionen rechtskräftig bestätigen'), Leibeigene erledigen, Minderjährige majorenn sprechen, infamirte Personen restituiren."

(He may confirm or annul the appointment of guardians, trustees, and executors, confirm the adoption of sons and daughters, he may liberate serfs, declare minors to be of age, and rehabilitate such persons as have been declared infamous.)

IV. "Er ist ferner berechtigt, Doctoren und Licentiaten aller Facultäten, der h. Schrift, der Rechte und der Arznei, auch Magister der freien Künste und Bacalaurii zu machen und ihnen 'die doctorlichen Zierden und Clainodt' zu verleihen; doch mit der Bedingung, dass der Candidat zuvor, unter Beiziehung dreier anderer Doctoren, 'notdürfftiglich examinirt' worden, und sich als würdig erwiesen habe."

(He also has the privilege of granting the title of Doctor and Licentiate of all Faculties, Theology, Law, and Medicine, also that of Master and Bachelor of Arts and granting to them the insignia and crests of Doctors, but with the proviso that they should pass before him and three other Doctors "a superficial examination", and prove themselves worthy of the honour.)

V. "Hat er das Recht, ehrlichen, redlichen Leuten, welche er dessen werth erachtet ('welches wir dann seinem gefallen und beschaidenheit heimbgestellt haben wollen'), erbliche Wappen zu verleihen, und sie somit zu Wappens- und Lehensgenossen zu machen. Doch darf er nicht verleihen: den kaiserlichen und königlichen Adler; nicht die Wappen anderer Fürsten, Grafen und Freiherren; auch nicht irgend eine königliche Krone auf dem Helm, was sich der Kaiser vorbehält."

(He has the right to grant hereditary arms to honest, straightforward persons whom he considers worthy of that honour ("which we leave to his judgement and tact"), and thus to make them companions in coat-armour, but he has no privilege to grant to them the Imperial or Royal Eagle, the arms of other princes, counts, and barons, nor a Royal crown under their crest, a right the Emperor reserves to himself.)

f. 29.

15. "Cadat alea fati" 71.

"Quello chi vuol il Ciel convien chi sia."

Arms (Sibmacher, *Bürg. Wappenbuch IV.* 59 T. 68).

Wolphgangus Hunger. D. Bononiae, 18 Junii.

f. 34.

1572.

In Gloria.

Arms: *sable three crosses paty silver* (R. ii. 724, wrongly as Schönburg, S. i. 122).

Georgius à Schonenburg, Decanus Metropolitanae Moguntinae.

f. 40.

CIC IC+LXXII.

W.

Arms: quarterly, 1st and 4th, *per pale gold and azure two fleurs-de-lis counter-changed* (Fugger). 2nd, *a woman in full front mantled sable crowned gold supporting in her right hand a mitre gules garnished gold* (Kirchberg). 3rd, *gules three hunting horns silver stringed and garnished gold* (Weissenhorn) (R. i. 724: S. iii. 27).

Maximilianus Fuggerus.

f. 59.

15+73. G. G. G.

"Zeitt und Weil ist ungleich."

Arms (R. i. 854: S. i. 25).

Albrecht Herr zu Gumpenberg, Freyherr.

f. 64.

1577.

Arms: *gold three leopards sable* (S. i. 19).

Christoff des heil. Röm. Reichs Erbtruchsess freyherr zu Waldtpurgh zu fl. Dt. Ertzhertzog Ferdinand zu Osterreich Rhatt und Camerer.

No. XI (R.C.) Fifteen leaves, inlaid and bound, of the Albums of Bartholomeus and Johannes Welser of Augsburg, containing the autographs and arms of the owner's friends and fellow students at Augsburg, Laugingen, Tübingen, Bourges, and Paris in the years 1574 to 1580. Amongst the entries are:

f. 2.

"Sors oīa versat."

Arms: *silver on a mount a trefoil slipped sable* (R. ii. 303: S. i. 209) (Neidhart).

Matthaeus Daniel Nithard Aug:(ustanus) Die 3 Augusti Anno CIC IC XVIC.

f. 3.

1575.

"In Deo solo fiducia mea."

"Spes mea est Christus."

Arms: *per pale silver and gules a fleur-de-lis counterchanged* (R. ii. 1067: S. i. 207).

Melchior Welser, Tübingae 6 Aug.

f. 7.

V. V. V. L.

Arms: *per bend sinister gold and sable a stag rampant counterchanged* (R.ii.901 : S. i. 217).

Marcus Thenn, . . . Anno 1577.

No. XII (B.M. Bibl. Eg. 1194). The Album of Johann von Thau, sometime "Bürgermeister" of Vienna, consists of two printed books with woodcut illustrations by Virgil Solis, namely: *Biblische figuren des alten Testaments ganz kunstlich gerissen Durch den weltbrümpften Virgilium Solis, Maler und Kunststecher zu Nürnberg, 1565. Gedruckt zu Franckfurt am Mayn durch Johannem Wolffium* (2 vols.) and *Johan Posthii Germershemii Tetrasticha in Ovidii Metam (orpho-seon) Lib. XV quibus accesserunt Vergilii Solis figurae elegantes et iam primum in lucem editae: Schöne figuren, etc., MDLXIX*. He had them interleaved and bound, his arms being impressed on the outside cover. This Album contains inscriptions and beautifully painted shields of arms, some accompanied by full-length portraits, and amongst its contributors we meet abbots and other ecclesiastical dignitaries, judges and officials, soldiers and patricians, principally of Vienna, in the years 1578-1598. At a later period leaves from another Album have been inserted into the second book, but they do not concern us here.

On f. 10 is a coloured woodcut with the arms of Johann von Thau: *silver three estoiles gules impaling sable a gold griffin quartering per fess gold and sable a phoenix on a pyre in flames counterchanged*.

Thau's arms are not mentioned by Sibmacher or Rietstap; the arms blazoned on the 1st and 4th quarters are recorded on a struck medal (Bergmann, ii. 212, plate xx, no. 101), which must have been made after 23rd January, 1562, when he received the title of Imperial Councillor, and before 25th July, 1564, the date of death of Ferdinand I; but there is no record for the 2nd and 3rd quarters, which, very curiously, represent the arms of Georg Prantstetter, several times "Bürgermeister" of Vienna, who died without leaving issue on the 6th May, 1574. Neither Thau nor his first or second wife were related to Prantstetter, and it must be left to further research to ascertain if, and how, he obtained that augmentation.

Johann von Thau was a judge of the city of Vienna ("Stadtrichter") in 1562-1564, then "Bürgermeister" in the years 1570, 1571, 1575, 1578, 1579, 1582, 1583, and last in 1588 and 1589.

Amongst the entries are the following:

f. 14^b. Full-page painting (plate XXIX. 1) with the arms of the monastery of Heiligenkreuz: *gold on a cross gules a right hand in benediction vert* (S. Klöster,

VOL. LXII.

N N

p. 28) quartering Molitor: *gules three silver poplar leaves terminating in crosslets in bend.*

"Udalricus Tricesimus quartus Abbas Monasterii Sanctae Crucis in Austria."
(Ulrich II. Molitor was Abbot of Heiligenkreuz from 1558 to 1585.)

f. 23. Full-page painting (plate XXIX. 2) of the arms of the monastery of Lilienfeld and of its abbot Lorenz II. Reiss. Under mitre and crozier two shields accolé:

1. *azure three gold fleurs-de-lis in pale* (monastery of Lilienfeld). S. *Klöster*, p. 59, blazons *azure three silver fleurs-de-lis 2 and 1.*

2. *azure on a mount silver a crowned lion rampant gold holding a sceptre* (which is Reiss, not mentioned in S. or R.).

"Laurentius Abbas Monasterii Campililiorum in Austria Ordinis Cisterciensium MDXCIII. 6. febr."

(Lorenz II. Reiss was Abbot of Lilienfeld from 1587 to 1601.)

f. 58. Full-page painting (plate XXX. 1).

Arms: *gules a hat azure turned-up ermine* (R. i. 1002: S. i. 38).

Christoff Hütstockher, 1579.

f. 77. A full-page painting of the arms of the Scots Monastery at Vienna and of its abbot, two shields accolé:

1. *azure on a mount vert a book with its cover hanging from it gules garnished gold, over all a golden crozier in bend* (Scots Monastery).

2. *azure a gold fleur-de-lis between two stags' horns sable* (Schretel).

"Joan. Abt zu Schotten, Rom. Ky Mait Radt, Anno 1581."

(Johann IX. Schretel was abbot from 1562 to 1583.)

The monastery of Our Lady, called the Scots Monastery, was founded in 1158 by Henry, Duke of Austria, for Celtic monks of the order of St. Benedict, and up to 1418 only Scottish, Irish, and Welsh monks were admitted to it; owing to some difference as to the admission of other nationalities, they retired in 1418 to the Scots Monastery at Ratisbon. The present arms of the monastery, granted in 1700 by Leopold I, differ from those shown here, being: *azure on a mount vert a gold crozier in pale, over all a book gules garnished gold* (S. *Klöster*, p. 90, T. 101).

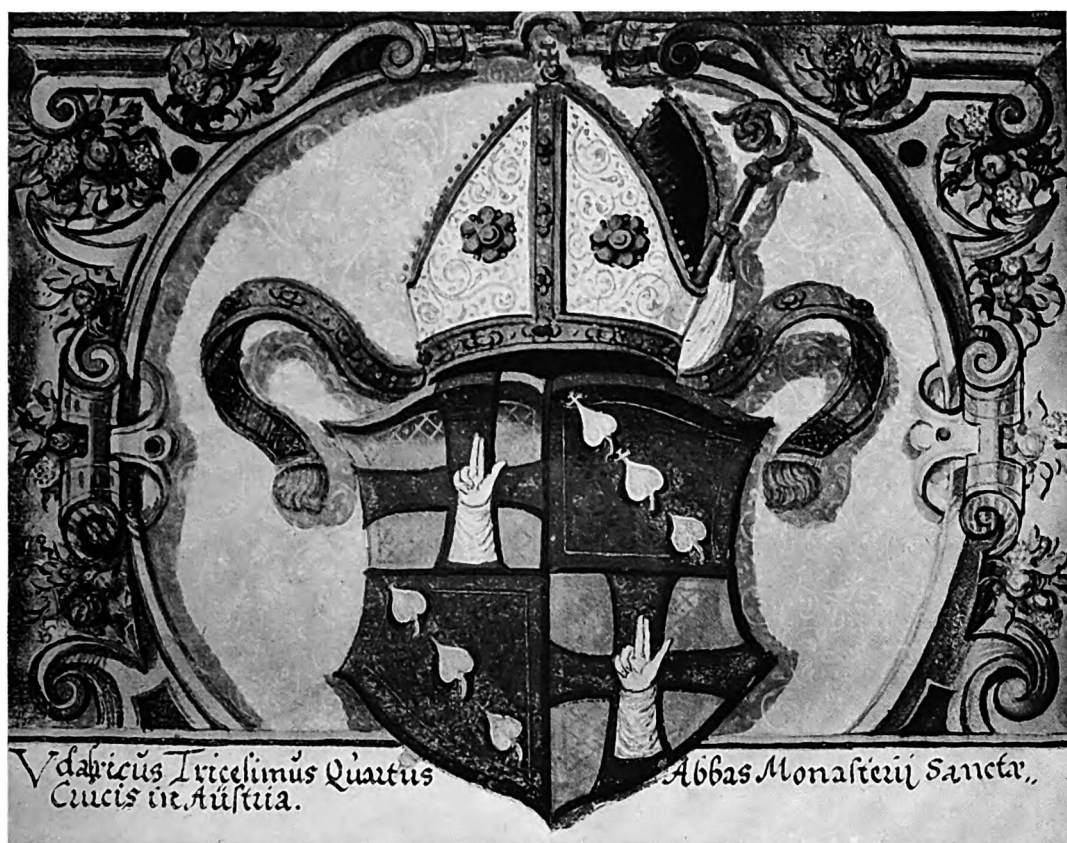
f. 118^b. Full-page painting (plate XXX. 2) with portrait.

"15 – Gott Verthraue ich – 86."

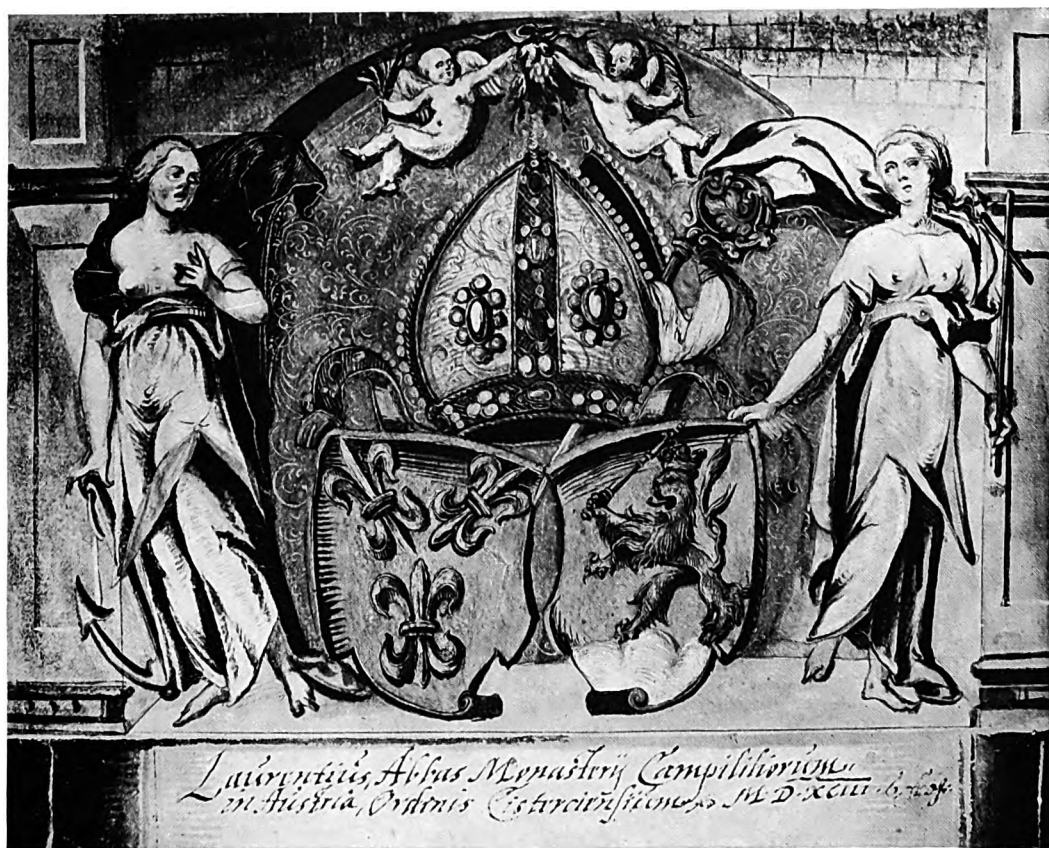
Arms: *per fess gold and sable an eagle counterchanged quartering gules a fess silver, over the fess in chief a demi-stag issuant proper* (R. ii. 1059: S. iii. 67).

"Georg Ludwig Wehe."

den 8 Tag Januarii Anno 86.



I



2

ALBUM OF JOHANN VON THAU, 1578-1598
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No. XIII (B.M. Add. 17813). The Album of Emeran Lerchenfelder, of Ratisbon, contains inscriptions, some with miniatures, others with the arms of his relatives, friends, and fellow students at Ratisbon, Amberg, Jena, Brunswick, and other places in the years 1579-1623. The miniatures and arms executed at Brunswick are rather poor.

On the front page is the inscription, "Genealogiae seu Amicitiae liber Emerani Lerchenfelder Ratisbonensis": and on

f. 8^b, the early arms of Haymeran (Emeran) Lerchenfelder: *gules on a silver chevron a lark rising proper*.

f. 9. The augmented arms quarterly 1 and 4: *gules on a silver chevron a lark rising proper*. 2 and 3: *silver a lion rampant crowned gold* (S. v. 225 and R. ii. 53, blazon 2 and 3: *silver a lion rampant gold*).

f. 11. 16-07 H. A. D. T. I.
"Vertu surpasse Richesse."
Ludtwig Landgrave zu Hessen.

16-07.
V. T. D. M. D. "En Dieu mon esperance."
Philippe Landgrave d'Hessen.

f. 13. An engraved portrait.
Mauritius Comes d'Nassau. Ao 1595.

f. 15. Arms of Juliers and Cleve.
Joannes Dei Gracia Dux Juliae, Cliviae et Montium Comes Marchiae, etc.

f. 16. Arms of Juliers and Cleve.
1595.
"En Dieu me fie."
Sibille duchesse de Juliers, etc.

f. 21^b. "Vel Tandem Terminus esto."
Arms granted 1557 (R. i. 712).
Joh. Wolf Freymond zu Mülfeldt und Hersching.

f. 22. Engraved portrait: Joan Wolf FREYMAN in Randeck, etc., MDXCVI.
aet. L.

f. 23. Engraved arms; augmentation granted 24 Aug. 1596 (R. i. 712).
IOHAN WOLF FREYMAN VON VD AUF HOCHEN RANDECK . . . UND REICHS HOF :
VICE : CÄZELER. AN. 1596.

f. 27^b. Arms: *gold a bend gules quartering chequy gules and silver* (Baden), *on a chief gules a silver Maltese cross*.

Underneath are three smaller shields of arms of his officials, Tschernin, Riedesel, and Ungemach.

- f. 28. "Alles verthan vor meinen endt
Macht mir ein richtiges testament."
Johann Carel Margraff zu Baden,
ritter zu Malta.

(This man, b. 1572, fell in the wars of the Netherlands in 1599.)

No. XIV (B.M. Bibl. Eg. 1198). The Album of Joannes Molitor of Nuremberg contains inscriptions, some with shields of arms, of his fellow students and professors at Altdorf in 1581-1583 and 1590, Heidelberg 1586-1588, and at Ingolstadt in 1591. Amongst them are:

f. 49^b and 50. Woodcuts: "Insignia Melissi" by Tobias Stimmer.

f. 51^b. Woodcut portrait by Tobias Stimmer (plate XXXI. 1).

"Effigies Pauli Melissi Franci P(oetae) L(aureati) An. Aeta. xxx.

"P. Melissus, Comes Palats. Eq., civis Rom. scribt. Kalendis Quinctilib. Ao. MDLXXXI. Noribergae."

(Paul Sched, called Melissus, born 1539 at Melrichstadt in Franconia (the son of Balthasar Sched and Ottilia Melissa), studied at Erfurt and Jena, was ennobled and appointed Poet Laureate at Vienna, and later at Padua, Comes palatinus, Eques Auratus, and Civis romanus. He also travelled in England, and on his return received the appointment of librarian at Heidelberg, where he died in 1602.)

f. 61. Arms (R. i. 768). Andreas Geuder ab Herolzberg, Altdorf 3 Aug. 1583.

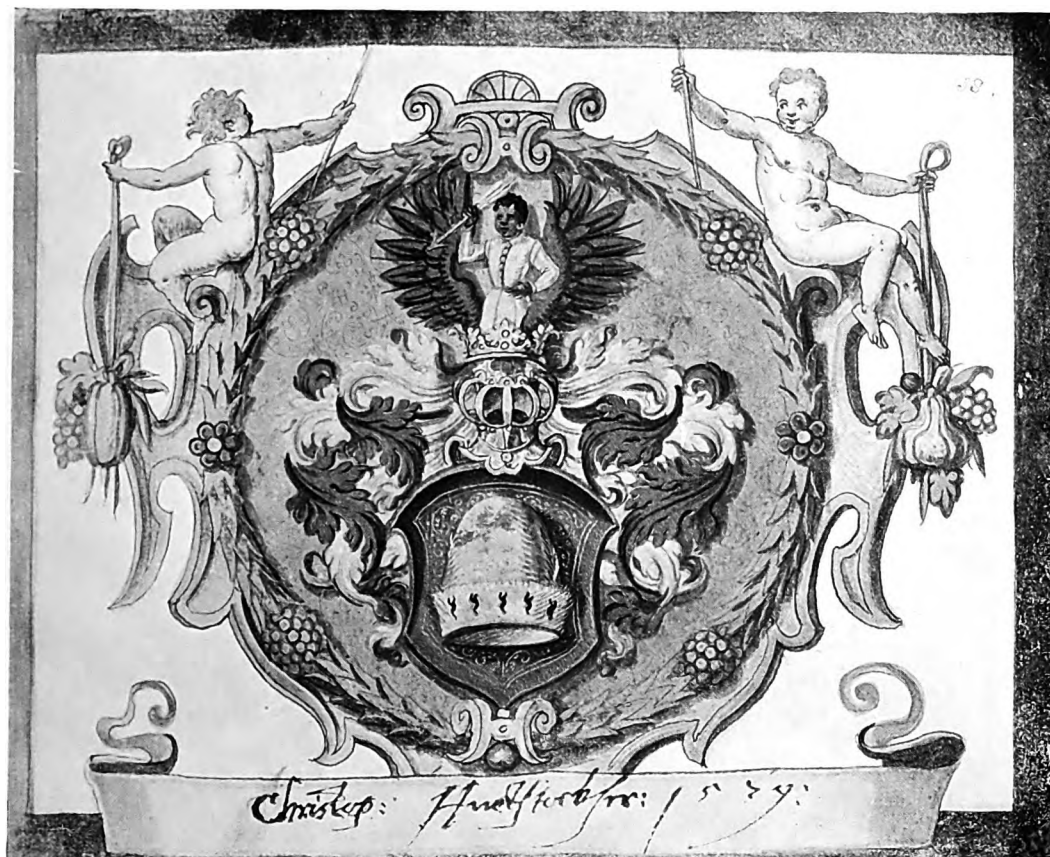
f. 62. "Non est Mortale quod Opto."
Jacobus le Seigneur, Gallus.
17 Martii 1591. Ingolstadii.

f. 68. Arms (R. ii. 571). Philippus Rieter von Kornburg.
Altdorfii Noric: 4 Martii 1586.

f. 70^b. "Avec le temps et ma peine."
Heinricus Bachhoffen Echt.
Altdorphii Norico, 2 Sept. 1590.

No. XV (B.M. Bibl. Eg. 1199). The Album of Sebastian Zäh of Augsburg, in its original binding, with the initials S. Z. A. and dated 1587, contains inscriptions, some with shields of arms and paintings, of his friends and fellow students at Augsburg, Pisa, Florence, Rome, Prague, and other places in the years 1581 to 1600.

He was probably a son of the Sebastian Zäh who on 23rd July, 1560, married Susanna, daughter of Ottmar Schlecht and widow of Lienhart Eggelhof, and



I



2

ALBUM OF JOHANN VON THAU, 1578-1598
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who obtained the nobility of the empire with an augmentation of his coat armour on the 27th April, 1581. Amongst the inscriptions are the following:

f. 5. "Hubertinus Albitius Patricius florentinus . . . manu propria scripsit. Pisis. calendis februarii 1592."

f. 5^b. "Ars natura supplet."
Arms (not in R. or S.).

"Joh. Pietro Francavilla scultoro belgis . . . in Fiorenza questo dio xxix di Octobre 1592."

(This Joh. Pietro Francavilla, born 1548 at Cambray, was, according to Nagler, a pupil of Giovanni da Bologna.)

f. 6 (fig. 2). "Monsgr Sebastiani Zeck.

Pour la longa amities q. je auous eulx ensamble, moi Jehan bolongna fia-

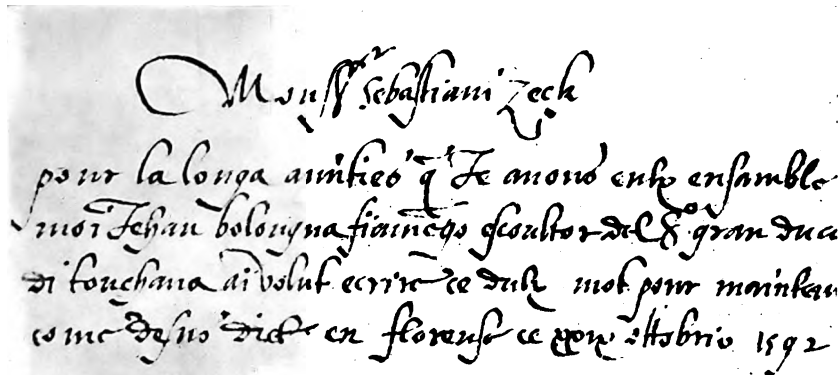


Fig. 2. Album of Sebastian Záh.

mēgo escoultor del S^o gran Duca di Touchana ai volut ecrire ce dulx mot pour maintenir es me desno. Dict en Florense ce xxix ottobris 1592."

Although this is neither good French nor Italian, it is probably the most noteworthy inscription of the whole book.

f. 10. "Die Welt ist ein Gaggelsack."

Arms: *per fess silver and gules three roses counterchanged* (not in R. or S.).

"Veitt Conratt Schwartz den letsten October ão 1581 zu Ehren seines lieben Veters Sebastian Zähen des jüngern dises hieherr gestellt hatt."

f. 11. A miniature.

Josias Seuter Augustanus.

f. 12 and ff. The arms and inscriptions of Augsburgers, viz. Johann Ulrich Bechler, Christoph Amann, Simon Fabricius, Johann Christoph Hörmann, Paulus Manlich, Balthasar Ligsaltz, Abraham Mannlich, Tobias Wind, and Johann Christoph Jenisch.

f. 34. "Audentes Deus ipse iuuat."

Petrus Kohary, Capitaneus Equitum et peditum quondam Illustri Dni. Nicolai Palfii. 12 Dec. 1600.

f. 35. A beautiful miniature; by its side the arms: *azure a fess between three gold estoiles*.

Marcus Bechlerus, Augustanus.
2 Martii. Ao. 87.

No. XVI (B.M. Bibl. Eg. 1553). The Album of Caspar Fraisch, "Küchenmeister," "Haus und Küchenmeister," of the Princes Maximilian, Philip, and Ferdinand of Bavaria (sons of Wilhelm V, Duke of Bavaria), contains inscriptions of princes, nobles, and others, some with shields of arms and miniatures, at Ingolstadt in the years 1588 to 1612. Amongst the entries are the following:

f. 1. "15 - Corona Legitime Certantibus. - 90."

Arms of Austria.

Ferdinandus Archid. Austriae.

(Ferdinand, Archduke of Austria, b. 1578, became King of Bohemia 1617, of Hungary 1618, Emperor, as Ferdinand II, 1619, †1637.)

f. 2.

15 † 95.

"OMNIA."

"Ernestus Elector Coloniësis, Bavariae Dux."

(Ernest son of Albert V, Duke of Bavaria, b. 1554, became Bishop of Freysing 1565, Hildesheim 1573, Liège 1581, Archbishop of Cologne 1583, †1612.)

f. 3.

1595.

"R . M . H . N . D . W ."

Fridericus Elector Palatinus etc.

(Frederick IV, b. 1574, Elector 1583, †1610.)

f. 4.

15 - Dominus Virtutum nobileum - 88

Arms of Bavaria.

Maximilianus Bavariae Princeps.

(Maximilian, b. 1573, became Duke of Bavaria 1597 and Elector 1623, †1651.)

f. 8. Arms: quarterly: 1st and 4th *gules a bend silver* (Bishopric of Ratisbon), 2nd Palatinate, 3rd Bavaria.

Phil. Eps. Ratisbonen.

Ingolstadii.

(Philipp, b. 1576, became Bishop of Ratisbon 1579, Cardinal 1597, †1598.)

f. 9.

1590.

Arms: Palatinate quartering Bavaria.

Ferdinandus Com. Palat' Rheni Bavariae Dux.

(Ferdinand, b. 1577, became Bishop of Liège, Münster, and Hildesheim, and Archbishop of Cologne 1612, Bishop of Paderborn 1619, †1650.)

f. 11. "Carolus Card^{alis} a Lotharingia, Episcopus Argentinensis et Metensis."
(Charles, son of Charles II, Duke of Lorraine, became Cardinal in 1588,
†1607.)

f. 17. "Noctes enumeravi mihi laboriosas."
Julius Eps. Wirceb.

(Julius Echter von Mespelbrunn became Bishop of Würzburg in 1573, †1617.)

f. 18. "Sana & Sanabor."

Arms: *gules an eagle silver quartering gules two bars wavy silver.*

Joannes Eps Tergestin.

(Joannes (VIII) Bogorinus became Bishop of Trieste 1595, †1597.)

f. 19. Arms: *silver a cross paty sable* (Teutonic Order) quartering *gules an ibex rampant proper* (Bobenhausen), *over all on a cross paty sable another flory gold; on a gold inescutcheon an eagle sable* (Master of the Teutonic Order) (S. v. 29).

Heinricus Dei gratia Administrator magni Magistratus Borussiae et Ordinis Theutonici per Germaniam Italiamq. Magister.

(Heinrich (V) von Bobenhausen became Grand-master of the Teutonic Order in 1572, resigned in 1590, †1595.)

f. 30. Arms of Fugger, Christophorus Fugger, 1588.

f. 31. " " Jacobus Fugger, 1589.

f. 32. " " Constantinus Fugger.

f. 32^b. " " (Georgius?) Fugger, 1595.

f. 46. " " Joannes et Hieronymus Fugger, frës germani, 1594.

f. 47. " " Wilhelmus Fugger, 1597.

f. 48. " " Christoph, Franciscus und Ferdinand Fugger
Gebrüder, 1597.

f. 73. 1595. S. D. W.

Arms: *azure two gold arrows in saltire between two silver estoiles one in chief one in base.*

Gregori Orainski Deuffl des Herzog in Beirn Zwerg.

f. 115. 1594.

Unverhofft kombt offt.

Arms: *gules a boar rampant sable* (not in R. or S.).

Meinem gunstigen unnd vertrauten lieben Herrn Bruder Casparn Fraiss-
leben (*sic*) Ir. F. D. Dreyer jungen Fürsten Inn Bayern etc. Hauss und Küchen-
meister Hab ich Benedict Schweindl Hochgedachter der Zwayen Geistlichen
Fürsten Camerdiener zur guetter Gedechnuss geschrieben in Jngolstadt den
16 November.

No. XVII (B.M. Add. 19065). The Album of Timann Cock of Bremen contains inscriptions of the owner's friends and fellow students and of learned men at Bremen, Leyden, Helmstadt, the Hague, and other places in 1589 to 1595. On f. 2 is the owner's inscription:

"Thesaurus amicorum
Timaenni Coccii Bremensis."
Mense Aug. Ao. 1589.

And the following are of particular interest:

f. 15. En Tabulis inscribo tuis, ANTE OMNIA MUSAE
Sollene id Dousae SYMBOLON esse scias.
Tu fidei haec cape signa meae: nam quid pedis ultra
Sum quidcumq. tuū est: caetera nec mea sunt.
J. Dousa scribebam.

Hagae-comitis A MDXCIII Cal. Sextil.

(J. Dousa, born 1545, studied at Louvain, Douay, and Paris; William of Orange made him Governor of Leyden, which town he defended against the Spaniards. He was appointed Keeper of the Archives of the States-General, chief librarian of Leyden, 1591, elected to the States-General, and died in 1604.)

f. 15^b. An inscription.

Janus Dousa filius.

(Born 1572, poet, philosopher, mathematician; he was appointed in 1591 librarian at Leyden, †1597.)

f. 43. "Nihil utile quod non honestum."
"Veras igitur stabilesq. acquirere divitias,
animi vere generosi opus putato."
Joannes Dee, Anglus.

Bremae 14 novebr. Ao. 1589.

No. XVIII (R.C.). Twenty leaves, mostly vellum, of the Album of Heinrich Pilgram of Nuremberg, containing miniatures and inscriptions with the arms of his friends at Nuremberg and Vienna in the years 1589 to 1596. Both miniatures and arms are very finely painted. Among them are the following:

"Gloria Virtutis Premium."

Arms: *per fess sable and gold over all a mermaid proper crowned and vested gules quartering per pale gules and gold a fleur-de-lis counterchanged over all on an escutcheon silver a bull's head proper* (R. ii. 571: S. i. 205).

Carl Rietter von Kornburg.

Wien, den 24 februar 1590.

Miniature representing full-length figures of a lady and of a man holding a gun; signed with a monogram **A**, probably that of Jost Amman.

No. XIX (R.C.). 110 leaves of finely executed miniatures which at one time formed the Album Amicorum of a soldier of some standing, who got his comrades in arms at the siege of Gran to enter their mottoes, arms, and names on the back of some of his miniatures. These entries are all dated August and September, 1595: "Im Feldlager vor Gran," "Zu Gran im Feldlager," "Vor Gran," "Zu Gran," "Unter Gran."

Gran on the Danube, a fortress in Hungary, was conquered by the Turks in 1543 under Soliman II; in 1574 the imperial forces under the Archduke Matthias tried to retake it, but failed. In 1595 Charles, Prince of Mansfeld, again laid siege to it, and defeated the Turks who had come to its succour. Mansfeld died on the 14th August, 1595, but the Archduke Matthias continued the siege and forced the Turks to surrender the town in the same year.

Some of the owner's friends, who entered their names, were:

Johann von Althan.

Gotthard von Starhemberg.

Ludwig von Starhemberg.

Paul Jacob von Starhemberg.

Hans David Harsdorffer and Dietrich Schiffer "Landtsknecht Fendrich".

Nicholaus Hochhauser von Hochhausen with the motto: "Allen die mich kennen, den geb Gott, was sie mir gönnen."

Christoph Hochhauser von Hochhausen with the motto: "Wer für mir redet Guttes und hinter mir Arges, so kom der Teufel und brech ihm den Hals."

Sigmundt von Zedlitz with the motto: "Ach Gott lass mich erwerben, Gar Ehrlich Leben und sehlig sterben." This last entry is on the reverse of a miniature with the inscription "Reina di Angletterre", but it bears very little resemblance to Queen Elizabeth.

These miniatures are very interesting, representing English, French, and Italian personages, high dignitaries of the church and law, soldiers, ladies of high and low estate, amongst the latter a "Ruffiana" or procuress; then there are representations of different occupations, modes of travelling, the Venetian Bucintaur, galleys and gondolas, etc.

No. XX (R.C.). The Album of Johann Gastel of Augsburg, a student, then a Doctor of Medicine, with inscriptions, miniatures, and arms of his friends and fellow students at Augsburg, Dillingen, Venice, Padua, Florence, Rome, and Salzburg in the years 1595 to 1615. The miniatures represent dignitaries of Venice and of the University of Padua, portraits, and allegorical subjects. Some of the entries are:

f. 3. "16- Dabit Deus his quoque finem -o6."

Arms (R. i. 961: S. i. 214).

Philipp Hochstetter, Augustanus.

f. 6. "15- Vive memor socii quem tibi iunxit amor. -99."

Arms (R. ii. 1113: S. i. 26).

Adamus Baro à Wolckenstain. 22 Martii Anno 99.

f. 41. "Tout vient à point qui peut attendre."

Arms (R. i. 724: S. i. 19).

Severinus et Joan: Jacobus Fuggeri Barones in Kirchberg et Weissenhorn
amicitiae ergo haec pingi curarunt Domine Gastellio. Die 17 Januarii 1606.

f. 62^b. "Amor $\overline{\text{d}}\text{ia}$ Vincit."

Miniature; a knight holding a shield with arms: *gold three wolves' snares inverted sable in pale* (R. ii. 820: S. i. 111).

Jo. Conradus à Stain. Anno 1598 30 Maii.

f. 69^b. "15- Virtute nihil praestantius. -99."

Miniature; a knight on horseback holding shield with arms: *silver a fess gules between two leopards azure* (R. ii. 695: S. i. 115).

Johannes Rudolphus Schenck von Stauffenberg.

f. 81^b. Miniature portrait: "Vera effigies Melchioris v. Stein aetatis suae
13. die Februarii 26 Ano. 97."

f. 82. "Spes mea Christus" 1597.

Arms (R. ii. 820: S. i. 111).

Melchior v. Stein haec sua insignia amoris ergo pingi curavit.

f. 107^b. Miniature: a knight on horseback holding a flag with the arms of
Brahe (R. i. 282); the same on the horse's trappings.

f. 108. 16- "Mas honra que vide." -01.

Arms: *sable a pale silver* (R. i. 282).

Otto Brahe A. F. Danus J. V. A. J. Cons.

Padua 23 Junii.

No. XXI (B.M. Bibl. Eg. 1220). There are only a few arms in the Album of
Johannes Opsimathes of Moravia, but many interesting inscriptions of royal
and princely persons, English prelates and statesmen, of professors and other
learned men, collected at Paris, London, Geneva, Leyden, Marburg, Altdorf,
Wittenberg, and other places in the years 1598-1620.

Amongst the signatories are:

f. 1. 1616.

"Si vis omnia subicere subice te rationi."

Carolus P.

f. 2. 1607.

"r. v. r. d. b. m."

Friedrich Pfaltzgrave.

(Afterwards the Elector, who married in 1613 the Princess Elisabeth and in 1619 was elected King of Bohemia.)

f. 6. "Theatrum pietatis conscientia."

Jacobus (Montague) Bathoniensis et Wellensis (Episcopus).

R. Lincoln(iensis) (Richard Neile, Bishop of Lincoln).

f. 21. Paulus Merula (the great jurist and Professor of History at Leyden, also librarian of that university; born at Dortrecht 1558, died at Rostock in 1607).

f. 30. Theodorus Beza, Geneva 1601 die Januarii 7.

(The well-known writer and Calvinist preacher at Geneva who wrote the history of the reformed church in France from 1521 to 1563, the *Life of Calvin*, and many other books; he died in 1605.)

f. 43. "Virtute et Genio."

Carolus Clusius Atrebas.

Lugduni in Batavis. iv Idus Maius 1600.

(Carolus Clusius (Charles de l'Ecluse), born at Arras 1526, a botanist and well-known writer on the subject, was appointed by Maximilian II. and Rudolph II. Director of the Imperial Gardens, lived from 1587-1593 at Frankfort on-the-Main; then became Professor of Botany at Leyden, where he died in 1609.)

f. 52. Stephanus Lesurius, Eques Auratus.

(Sir Stephen Lessieur, English ambassador to the emperor.)

f. 68. Henricus Monantholus Medicus et Mathematicarum Professor Regius.

Lutetiae. 24. Julii, Anno 1600.

"Coelo restat iter, coelo tentabimus ire."

(Henry Monantholus (Monantheuil), b. at Rheims in 1536, became Professor of Medicine and of Mathematics at Paris, then Dean of the Medical Faculty; his publications on mathematical and other subjects are numerous. †1606.)

f. 80. Johannes Deodatus (Diodati, b. at Lucca, 1576, became Professor of Theology and pastor of the French and Italian churches at Geneva; published an Italian translation of the Bible and the first French translation of the History of the Council of Trent, etc.; †1649).

f. 101. 1616.

"Hic nihil omni ex parte beatum."

Thomas Moravius Scot(us),

Sereniss. Principis, regis Angliae filii praefectus.

Londini in Anglia, Julii 17.

No. XXII (R.C.). A collection of 63 leaves with woodcut borders, which formed the Album of Philipp von Brandt, and contain the inscriptions, some with

the arms of his friends, who were ecclesiastics, officials, and soldiers at Tübingen, Neuberg on the Danube, Sulzbach, Coblenz, and Ratisbon in the years 1600-1630. Some of the entries are:

- f. 1. 1600.
 "Tendit ad ardua Virtus."—"Ich schweige und gedencke."
 Arms (R. ii. 1051: S. i. 32).
 Joannes Georgius Liber Baro à Wartenberg . . . Tubingae 22 April:
- f. 9. 16*01.
 "W . G . W . W ." (Wills Gott Wer Wends.)
 Arms (R. ii. 101: S. i. 112).
 Caspar Schilling von Cannstadt . . . Neuburg a. d. Donau.
- f. 13. 1601.
 "Gott Trau, uff Niemandt Bau."
 Arms (R. ii. 275: S. i. 206).
 K. H. Muffl ∇ . F. Pfalzg: Hoffmeister zu friedrichsburghk.
- f. 59. den 12 Decembris A° 1630.
 "Ein frischer und ein frölicher Muth
 ist besser den viel Geldt unnd Gutt."
 Friederich von und zum Egloffstein.
Note in the owner's hand: Gnadt Im Gott
 blieb vor Nördling
 A° 1634.

No. XXIII (R.C.). Ernst Gross von Trockau, called Pfersfelder, the owner of this Album, who became at an early age Canon of Bamberg in 1590 and of Würzburg in 1611, died at Würzburg in 1628. His Album, interleaved with some engravings, contains autograph inscriptions and the arms of his fellow students at Würzburg in the years 1602-1604, at Orleans 1604-1606, and of some of his fellow canons and other high ecclesiastical dignitaries at Bamberg and Würzburg in the years 1602 to 1626. Amongst the entries are:

- f. 2. 1604.
 "Domine nolo vivere, nisi tecum moriar."
 Arms: under an imperial crown two shields accolé.
1. *Gold a lion rampant to the sinister sable debruised by a bend sinister silver* (Bishopric of Bamberg). 2. *Gules a goat's head couped silver* (Gebaßattel).
 (The imperial crown alludes to the founder of the bishopric, the Emperor Henry II.)
- Joan: Philip: $\overline{\text{Eps}}$. Bamberg.
 (Johann Philipp von Gebaßattel became Prince Bishop of Bamberg 4th February, 1599, and died in 1609.)

f. 3. "16. Dominus Providebit. 11."

Arms (R. i. 1126: S. i. 101).

Hector à Kotzau Cathedralis Ecc̃ae Bambergensis Decanus nec non Herbipolensis Canonicus, Praepositus ad S. Jacobum prope Bambergam, Sanctissimi Domini nostri Pauli Quinti conciliarius et prothonotarius Apostolicus.

f. 4. 1612.

Arms (R. ii. 863: S. i. 103).

Joh. X̃phorus Neustetter dictus Sturmer Praepositus Bambergensis et Custos Moguntini.

f. 5. "Les choses plus difficiles, deviennēt fort faciles, en travaillant."

Arms (R. ii. 533: S. i. 110).

Hanns Michael und Albrecht Ernest von Rechberg von Hohen Rechberg, Gebrueder.

Jn Orleans den 31 May A°. 1605.

f. 17. "Ante opus considera."

Arms (R. ii. 773: S. i. 104).

Theodorus à Gich. Ann. 1612.

f. 21. "Dulcia non meminit q. non gustavit amara."

Arms (R. ii. 536: S. i. 113).

Wolf Hendrich von Redwitz, Dombherr.

f. 29. "In necessitate, verus probatus amicus."

An engraving, probably by Johann Sibmacher, with the arms of Kolowrat-Krakowski (R. i. 1116).

Wladislaus Abdon Bezdrutzki a Kolowrat, Baro Bohemus A°. 1608. 26 Septemb:

f. 80. "Pulchra est concordia cordis et oris."

Arms (R. i. 599: S. i. 103).

Philippus Adolphus ab Ernberg 16 Junii A°. 1605. Aureliis.

(This man became Prince Bishop of Würzburg in 1623. †1631).

No. XXIV (B.M. Bibl. Eg. 1234). A copy of *Francisci Sanctii Brocensis comment(arii) in Andreae Alciati Emblemata* published at Lyons by Guillaume Roville in 1573, interleaved for Nicolaus Claus of Skara in Sweden, contains inscriptions of learned men and the owner's fellow students at German universities and other towns in 1605 to 1628. The most interesting is that of Johannes Kepler, the astronomer.

f. 242". "Nemo cadit, recubans, terrae de cespite planae.

O curas hominum, o quanta est in rebus inane."

Joannes Keplerus Sa° C. Mtis. Rudolphi II Mathematicus scripsi Lincii. Id. Jun. Anno. Christianorum. MDCXI.

No. XXV. In the Album of Matheus Schmoll of Ratisbon, 1628, left to the library of our Society by the late Sir Wollaston Franks, is the following inscription by Johannes Kepler:

f. 136. "O curas hominum, o quantum est in rebus inane;
Si nisi per Mundum, fuga Mundi non patet usquam."

Joannes Keplerus Imp. Caes. . . . Ferdinandi II. . . . Austriae Super-Anisanae Mathematicus, scripsi Ratisbonae Nonis Decembris Anno MDXXVI.

No. XXVI (B.M. Bibl. Eg. 1238). The Album of Paul Groe of Nuremberg

Hoc age quod agis

Viro Clarissimo Paulo Groe
omnium Elegantiarum admiratori
Hanc obsequii et amicitiae Syngrapham
Petrus Paulus Rubenar
manu sua L. m. inscripsit
Antuerpia xxvii die July 1619

Fig. 3. Album of Paul Groe.

contains autograph inscriptions of learned men, professors, and the owner's fellow students and travelling acquaintances, dated at Altdorf, Jena, Leyden, Louvain, Antwerp, London, Paris, and other places in the years 1606-1620.

Amongst them are the following:

ff. 2 and 2'. Johann Ernst der Jünger, Friedrich, Wilhelm, Albrecht, Johann Friedrich, Ernst, Friedrich Wilhelm, and Bernhard, Dukes of Saxony, sons of Johann, Duke of Saxe-Weimar.

f. 8 (fig. 3). "Hoc age quod agis."

Viro Clarissimo Paulo Groe omnium elegantiarum admiratori hanc obsequii et amicitiae Syngrapham

Petrus Paullus Rubenius
 manu sua L. M. Inscriptit
 Antwerpiae xxvii die Julii MDCXIX.

f. 9. Joannes Meursius.

f. 28 (fig. 4). "Pondero non numero."

Guillielmus Camdenus Clarenceux Rex Armoꝝ in Anglia ad amicitiae
 Aram

P. 1619.

No. XXVII (B.M. Bibl. Eg. 1239). The Album of Otto Heinrich, Liber Baro in Herberstein, contains inscriptions of statesmen, professors, and other learned men at the Hague, Paris, Leyden, London, Oxford, Cambridge, Edin-

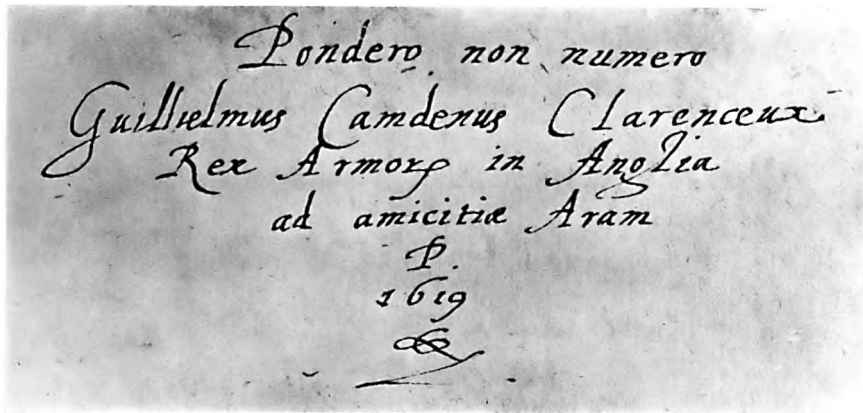


Fig. 4. Album of Paul Groc.

burgh, Dublin, and other places in the years 1607 to 1610, amongst which are the following:

f. 1. A Greek inscription.

Ego Jac. Aug. Thuanus . . . scripsi Lutetiae Parisiorum, 9 Oct. 1610.

(The great historian and book collector, †1617.)

f. 4. Dominus Jacobus Hamiltonus, Comes Abercorniae.—Robertus Hamiltonus.

f. 5. "Modestia magnes amor."

Rodolphus Winwood.

Hagae Comitis 1608.

(Sir Ralph Winwood, English Ambassador to the States-General and afterwards Secretary of State.)

- f. 6. "Virtus vera nobilitat, et qui genus iactat aliena laudat."

Ri. Spencer.

Regis Angliae Legatus in Belgio.
Haghae Comitibus, 25 Septemb: 1608.

- f. 10. Dutch inscription.

Cornelis Drebbel.

van Almar. A° 1610. den 7 Juni—in London.

(Cornelis Drebbel, born at Almar in 1572, a great scientist, mathematician, and inventor, came to England about 1604. He constructed and presented to James I. a machine for producing perpetual motion, which is described and illustrated in *A Dialogue Philosophicall* by Thomas Tymme. Besides many optical and mathematical instruments, he constructed a submarine boat which travelled under the water from Westminster to Greenwich. Drebbel died in London in 1634.)

- f. 13.

"Virtute et Genio."

Carolus Clusius adscribebam.
Lugdunis in Batavis 5 febr. 1609.

- f. 13.

Melchior Sebizius, Argentorati 19 Dec. 1607.

- f. 22.

Jsaacus Casaubonus.
Lutetiae Parisiorum Oct. 1610.

- f. 42.

"Virtuti Omnia Parent."

Franciscus Swertius F., Antwerpianus.
1609. xvi. Maij.
Antwerpiae Ambinaritorum.

- f. 54. "Man that is Regenerate, never can bee degenerate."

Anthonius Stafforde, Weschestriae.
27 Augusti, anno Salutis 1610.

No. XXVIII (B.M. Bibl. Eg. 1242). An interesting Album is that of Jonas Kröschl of Dresden, a court- and field-trumpeter of the Elector of Mainz, containing chiefly autograph inscriptions of other field-trumpeters in the service of the Emperor, the Duke of Saxe-Eisenach, the Elector Palatine, the Prince of Anhalt, the Margrave of Brandenburg-Onolzbach and of Count Hohenlohe in the years 1608 to 1611. Some of the inscriptions are:

- f. 2.

"Mit Freiden daran und mit Glück davon."

Arms: *silver a plume azure gold and gules* (not in R. or S.).

Jonas Kröschl von Dresden. Veld Tromet gehöret dieses Stambuch 1608,
20 Oct.

f. 4. "Glück und Lieb, Stild khein Dieb."

Arms: *per fess gules and gold a leaping stag proper* (not in R. or S.).

Dieses hab ich Caspar Wildt Trometer jetziger Zeit, Churf. Mentz. Musicus dem Ehrenhafften Jonas Kröschl Chf. M. Hoff und Veld Trometer zu guten Gedechnuss geschrieben. Actum den 18 November 1608.

f. 5. "Wo Trometter da Freudt, Wo Mussicanten da Neidt, Wo Jungfraun da Lust, Wo Schust und Schneid da Hunger undt Durst."

Herman Gremb	alle fürstliche Saechse
Hans Erhart Otho	Tromett zue Coburg haben dies
Godfrid Jordan	Unsern guten Bruder Jonas
Michel Onardan	Kröschl Churf. Mentz. Hoff
Michel Loss	Trumetter zue gutem
Bartel Jordan	Gedächtnuss geschrieben.
Christoph Baumeir	Aschaffenburg den 24 October 1608.
Hans Lömer	
Gerhart Herzberger	

f. 12^b. . . . zu Nürnberg den 3 October 16011 (*sic*).

Sigmundt Lenckh, f. Anhaltischer Drumetter.

"Gottes Gnadt undt gesunder Leib
Ein warmes Bett und ein schenes Weib
Ein althes Gelt und gutter Wein
Soll Allzeit bei einand sein."

f. 13^b. Zu Nürnberg den 3 October 16011 (*sic*).

Ich Hans Bumer, Deifel Hensel genannt, f. Anholdischer Veld Drumetter.

"Was Gott will, wer wers."

f. 27. Prag 7 May 1610

Erasmus Ramsentaller, Gräflicher Hoenloischer Vellt Trompetter.

f. 37. Nürnberg 12 Nov̄bris 1611.

Abraham Wimmer, fürstl. Brandt. zu Onoltzbach Trommetter.

f. 40. Dis schrieb ich . . . und zu gedenken unserr Riss nach Dresin, geben und geschriben. In Prag d. 1 May A° 1611.

Balthaser Bauman von Gelnhausen C-furstlich Mentzig Einspennig.

No. XXIX (B.M. Sloane 3415). The Album of Charles de Bousy, containing autograph inscriptions, some with shields of arms, a few with miniatures, of royal and princely persons, nobles and others, dated at London, Orleans, Dresden, Paris, Bützow, and Hamburg in the years 1608-1621. Some of them are:

f. 2 (fig. 5).

"Fax mentis honestae gloria."

Henricus P.

f. 5 (fig. 6).

"Si vis omnia subiicere subiice te rationi."

Ebor-Albaniae D.

f. 6 (fig. 7).

1609.

"Giunta mi piace honesta con leggiadria."

Elizabeth P.

f. 7^b.

16 C H 10.

J. S. T. D.

Electoral arms of Saxony.

Christian Churfürst.

f. 8.

Arms of Denmark.

Hedwig geboren aus Königlichen Stamme Denmark, Churfürstin zu Sachsen, 1610.

"Halss mitt jderman freundlich

Trau aber unter tausent kaum Einen."

f. 21.

"Vanish Feare since they who fall low must dy

As well as they that tumble headlong from the sky."

"Felix perit quicunque quem odit premit."

"Dou leur D'ou l'eur."

"Concilio nel guanciaie."

"Nach Recht und Ehren Stehet mein Begeren."

"Mas honra que vida."

E. Sackeville.

(This is probably Sir Edward Sackville (1591-1652), who, after the death of his brother Richard in 1624, became fourth Earl of Dorset; he was one of the commanders of the forces sent under Sir Horatio Vere to assist the King of Bohemia, sailed on 22nd July, 1620, and was present at the battle of Prague on 8th November, 1620. In 1621 he vigorously defended the proposal to vote a subsidy for the recovery of the Palatinate.)

f. 32.

1621.

"Vivit post funera virtus."

H. Levingstone.

"Est virtus, &c."

Arthurus Forbesius, Scotobritannus.

(This is probably the Sir Arthur Forbes who in 1631 commanded one of the five battalions of Scottish soldiers in the north of Germany under the Swedish general Todt, and who helped to clear Mecklenburg of the enemy and to storm many fortified places. Fischer, *The Scots in Germany*.)

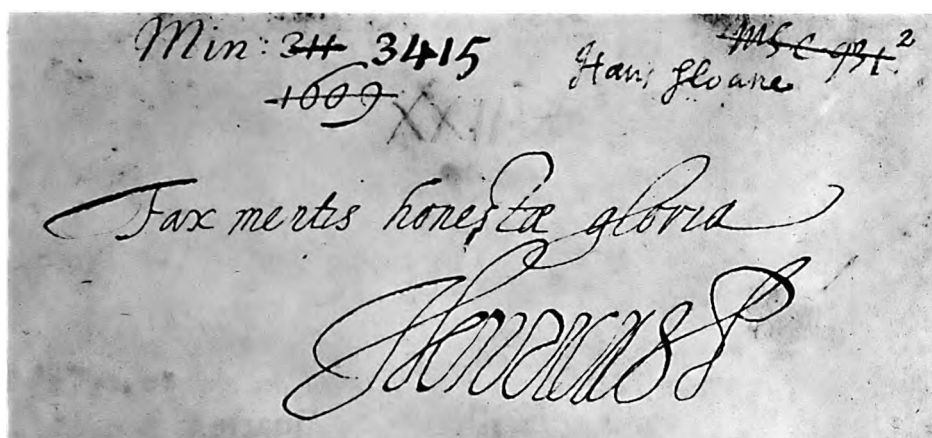


Fig. 5. Album of Charles de Bousy.

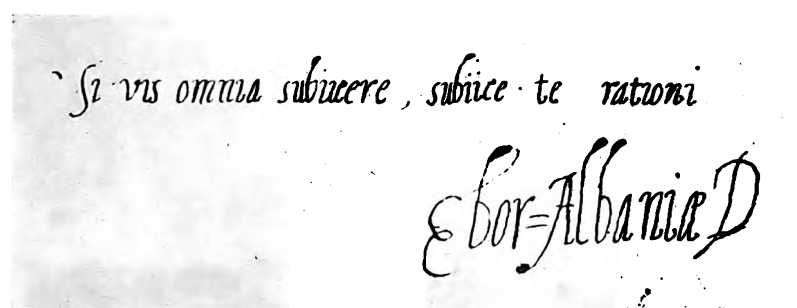


Fig. 6. Album of Charles de Bousy.

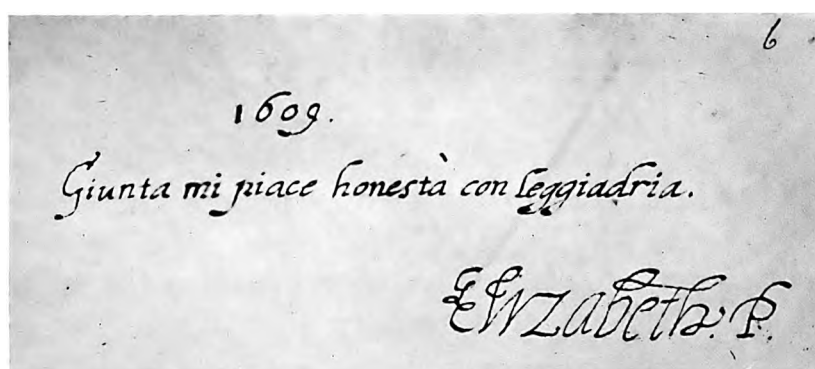


Fig. 7. Album of Charles de Bousy.

No. XXX (R.C.). The Album of Antonio Fabri, Organist at S. Antonio at Padua, contains inscriptions, sometimes accompanied by arms and miniatures, of Danish, German, and Swiss students at the University of Padua, in the years 1608 to 1625; it is in its original stamped leather binding with the monogram of the binder, M. W. Amongst the entries are the following:

f. 27. "Chi ha la fortuna per guida va sicuro al suo viaggio."

Arms (R. ii. 359: S. i. 15).

Giovanni Filippo della piu antiche famiglia Conti d'Ortemburgo . . . Padoa alli 9 di feb: de l'anno 1615.

f. 40^b. Arms: *per bend silver and gules a bend nebuly counterchanged quartering silver three piles azure a base gules, over all on an escutcheon azure a chevron silver* (R. ii. 1113: S. i. 26, who blazon 1st and 4th quarter: *per bend nebuly silver and gules*).

Udalricus Baro a Wolckenstein et Rodnegg . . . Patavii, 1^o Aprilis A^o 1625.

f. 41. His miniature full-length portrait.

f. 47^b. "Anno 1617. 26 Martii."

"Ou bien ou rien."

Arms (R. i. 1049: S. v. 3).

Ferdinando Jörgero L. Barone in Kreuspach.

f. 48. Miniature.

f. 73. "Bien vivre et bien mourir
C'est mon plus grand desir." "Tacendo spero."

Arms (R. i. 37: S. i. 22).

. . . Padova l'anno 1628 ad. 28 Feb.

Eustachio Barone d'Althan signor in Goltburg . . .

f. 117. 16 + 11.

"Tout pour elle rien sans elle mais qui est elle."

"A . S . V . M . D . S . S ."

Arms (R. ii. 808: S. iii. 89).

Sebastian Speidl.

f. 151. "Musica est grata Deo, et hominibus."

"M , V , S , I , C , A . Anno 1615."

Miniature showing the owner or his friend playing the spinet.

. . . Samuel Gensufius Austriacus.

f. 162. "Non mi curo della Luna

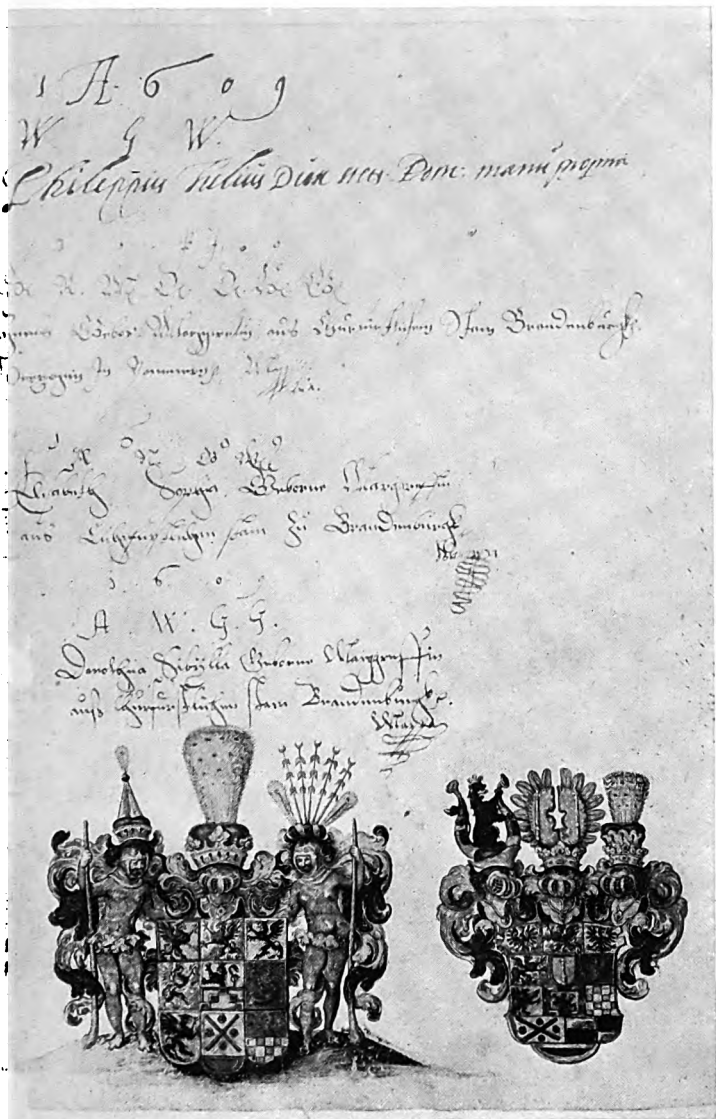
Quando mi splende il Sole."

Arms (R. ii. 587: S. i. 174).

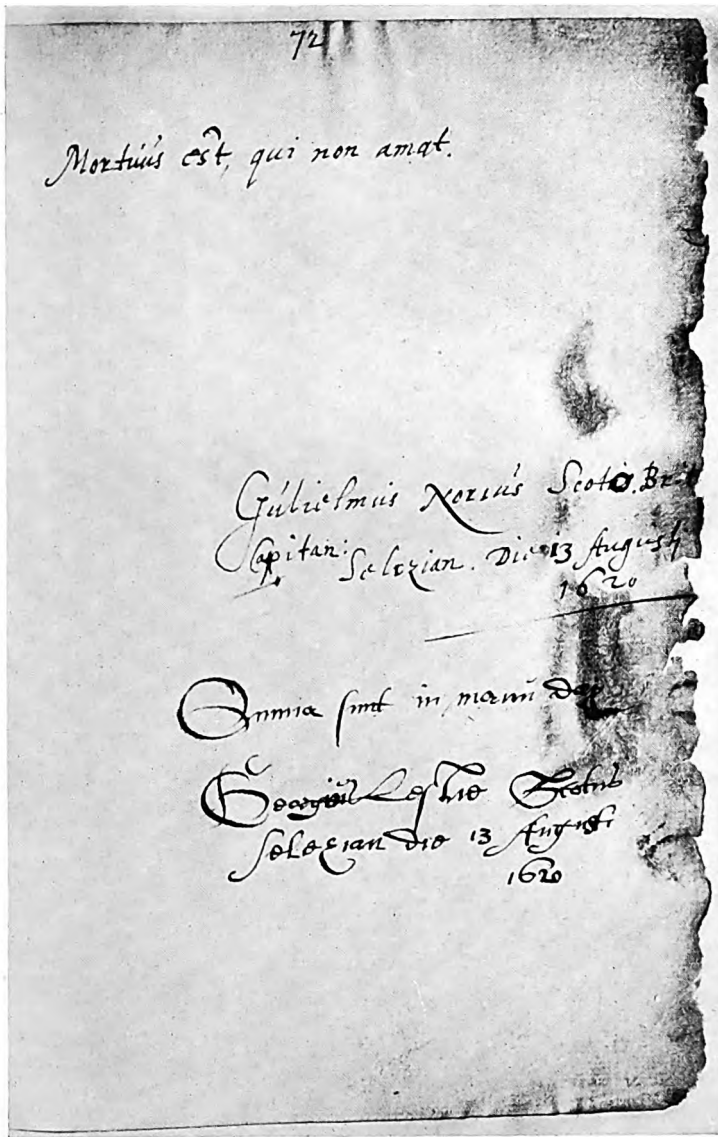
Daniell von Rochow m.ppria.



I



2



3

ALBUMS OF JOH. MOLITOR, 1581-1591, AND JOH. WILICZKY, 1608-1630
Published by the Society of Antiquaries of London, 1910

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No. XXXI (R.C.). The Album of Johannes Wiliczky of Witkowa, a Polish noble, is full of interesting inscriptions and finely painted shields of arms, collected by him whilst visiting the courts of northern Germany in 1608 and 1609, London and Paris in 1610. In August, 1620, we meet him at the camp of Selczan (south of Prague) amongst the Scottish captains of Frederick, Count Palatine of the Rhine, King of Bohemia. Amongst the entries, dated 1608 to 1630, are the following:

f. 24^a.

"16. H. E. 09."

"H. P. P."

Arms of Brunswick with inescutcheon: Bishopric of Halberstadt.

Henricus Julius Dei gratia P. E. H. D. B. D. L. manu sua.

"16 HH 09."

"En dieu est mon esperance."

Elisabeth geboren aus Königlichen Stamme zu Dennemarken, Hertzoginn zu Braunschweig unnd Lüneburg meine Hand.

"1609. La volonté de Dieu est mon but."

Frewlein Elisabeth, geborne Hertzogin zu Braunschwig und Lüneburgk meine Handt.

"1609. Omnia a Deo."

Freulein Hedwig geborne Hertzogin zu Braunschwig und Lüneburgk meine Handt.

1609.

"Deus ordinabit."

Frewlein Dorothea geborne Hertzogin zu Braunschwig und Lüneburgk, meine Handt.

f. 24^b.

"16. PHILOSOPHIA. 09."

"Christo et Reipublicae." "Pulchra est Concordia Cordis et Oris."

Arms of Pomerania.

Philippus Dux Pomeranorum, in Veteri Stetino 15 Martii . . .

f. 25.

"16. P. 09."

"A. N. C. W."

Arms of Holstein.

Sophia geborne zu Sleswig Holstein Hertzogin zu Stettin Pommern.

f. 29^a.

"1.6. A°. 0.9." "V. P. F. U."

Arms of Holstein.

J. Adolff H. z. Holstein.

"16 A 0.9 A. W. E. G. G."

Arms of Denmark.

Augusta, geborene aus Königlichen Stamm Dennemarken, Hertzogin zu Schleswig Holstein. Meine Hand.

16 A° 09.

Arms of Holstein.

Fridericus D. S. Holsatiae.

Adolphus D. S. Holsatiae.

f. 29^b (plate XXXI. 2). "1 A. 609." "W. G. W."

Philippus Julius Dux Stett. Pom. manu propria.

16. P. I. 09. "W. R. M. D. H. G."

Agnes Gebor. Marggrefin aus Churfürstlichem Stam Brandenburgk Hertzogin In Pommern Manu propria.

1609. A. N. G. W.

Elizabeth Sophia Geborne Marggrefin aus Churfürstlichem Stam zu Brandenburgk. Manu ppa.

1609.

"A. W. G. G."

Dorothea Sibylla Geborne Marggrefin aus Churfürstlichen Stam Brandenburgk. Mappa.

Two shields of arms: Pomerania and Brandenburg.

f. 33.

CIO IO CIX.

"Vince malum bono"

S. D.

Christianus Dux
Brunsvicensis et
Luneburgensis.

Rudolphus Dux Brunsvicensis
et Luneburgensis.

Arms of Brunswick.

f. 33^b.

1609.

"Herr Wie Du Wilt."

Marie geborne Hertzogin zu Sachsen des Kaiserlichen freyen weltlichen Stiffes Quedelburk Abbettissin . . .

Arms of Saxony with inescutcheon Quedlinburg.

f. 39.

"1609." "D. A. M. N."

Johannes Georgius princeps Anhaltinus manu ppr.

1. 6. IG. 0. 9.

"J. D. H. J. D. H."

Dorothea, F. z. Anhalt geborne Pfaltzgreffin bey Reihn.

Sophia Elisabeth F. z. Anhalt manuppr.

Agnes Magdalena F. z. Anhalt.

Anna Maria F. z. Anhalt.

Arms of Anhalt-Dessau.

Entries of peculiar interest are the following inscriptions of Scottish captains and soldiers, dated 13th August, 1620, at the camp of Selczan, about 25 miles south of Prague, men who either had followed Frederick and Elizabeth when they accepted the Bohemian crown, or formed part of the 2,000 volunteers raised for them by James I.'s permission, by Sir Andrew Gray, who early in 1620 had come from Bohemia to England for that purpose. After the disastrous battle of the Weisse Berg, which put an end to Frederick's kingship of Bohemia, some of these captains joined the different forces of the Union, and some of them, later on, the Swedish army; a few became noted leaders under Gustavus Adolphus, especially Sir James Ramsay, who, distinguishing himself in many engagements, especially in the defence of Hanau, died in 1639. George Leslie died in 1638 as Governor of Vechta, in Oldenburg. These and William Stewart, brother of the Earl of Traquair, are mentioned in the "list of the principal Scottish officers employed by Gustavus Adolphus in Germany" (Th. A. Fischer, *The Scots in Germany*).

- f. 65. "Plus tost que tard."
Andreas Gray.
- f. 66. "Jamais arrière."
J. Ramsay.
"Sans sousie."
James Norrie. Francis Tirwhitt.
"Mediocria tuta."
Patricius Hannay.
- f. 72 (plate XXXI. 3). "Mortuus est qui non amat."
Gulielmus Norius, Scoto. Brit.
Capitan: Selczian Die 13 Augusti 1620.
"Omnia sunt in manu Dei."
Georgius Leslie, Scotus.
Selczian die 13 Augusti 1620.
- f. 73. "Poca parola, basta."
Gulielmus Steuwart Scotobrittannus.
Capitan: Selczan 13 Aug. 1620.

On the last leaf, f. 223, we find the arms of Austria with the collar of the Golden Fleece and the autographs, dated 1610, of Isabel Clara Eugenia, daughter of Philip II. of Spain, and of her husband Albrecht, Archduke of Austria and Governor of the Netherlands. They were relegated to the end when the owner had his Album bound, no doubt because they were then on opposite sides in politics.

No. XXXII (R.C.). The Album of Valentin Löw, a pastor of the reformed Lutheran church at Neudeck, Prague, and Eger, is of peculiar interest for its autographs, some with shields of arms, of generals and other soldiers and high officials of the kingdom of Bohemia, some of whom took a leading part in the revolution of 1618, the beginning of the Thirty Years' War, and had become adherents of Frederick V, Count Palatine of the Rhine, after his election as King of Bohemia in 1619. After the disastrous battle of Prague some fled into exile, others were beheaded or imprisoned in 1621, and the property of most of them confiscated. Between 1620 and 1623 there are no inscriptions, but many from 1624 to 1629, referring to the persecution of their common religion and church.

Some of the entries are:

f. 1. 160 ~~ICE~~ 9 "Gott Mein Hoffnung."

Arms: *gules a swan silver* (R. ii. 742: S. i. 31).

Hans Georg Herr von Schwannbergk . . . R. K. Mýt. Radt und oberster Landt Kamererr derr Kronen Behmen geschribn Prag den 11 August.

f. 2. 16 . S . E 09.

"Ee wiegs alss dan wags."

Arms: *silver a tower gules quartered with azure two gold maces flory in saltire and in base a gold fleur-de-lis, on an inescutcheon gules an eagle dimidiated impaling silver a cross gules* (R. ii. 911: S. i. 18).

Hainrich Matthes Graf von Thurn, General Leutenampt Obrister über ein Regiment Knecht, schrieb zue guetter gedechtnuss Jn Prag, den 23 Tag Augusti.

(There were many causes for the breaking out of the war, but this Count von Thurn gave the signal for it on the 22nd May, 1618, when he and his co-conspirators stormed the castle, threw the imperial counsellors out of the windows, and the following day constituted a provisional government of Bohemia, the chief directors of which were Wenzel Wilhelm von Rupowa, Wenzel von Budowa, and Andreas Schlick; Thurn did not form part of it, but centred his energies on the organization of the Bohemian forces.)

f. 3. 16 - 09 "G . G . G . W . W ."

Arms (S. i. 23).

Leonhardt Co(lonna) Freih. zu Vels R. K. M. Radth undt Oberster Veldt Marschalck im Königreich Behmen . . . Prag den 26 August.

f. 4. 1609 "Trau Schau Wem."

Arms (S. i. 32: R. ii. 86).

Wilhelm der Elter H. von Lobkowicz R. K. M. Mundschenk Verornerter Director von den drei Evangelischen Stenden des Khinikraich Behem . . . Prag . . . d. 26 August . . .

f. 5. "Mein Hoffnung in Gott allein."

Arms: *gules a bend wavy silver over all a staff raguly proper in bend sinister* (not in R. or S.).

Andreas Stegeman, Rom. Kais. May. Hertschier undt Hoffbalbier. In Prag 23 October 1616.

f. 24. "1610." "Gottes Gnad erfreiet mich."

Arms: *gold a griffin holding in its right paw a hammer azure* (not in R. or S.).

Christoff Khober von Khobersperg Rom. Kai. Maytt. Raith Rath bei der Behmischen Cammer Buchhalterey. Prag 8 Aprilis a. w. s.

(This man, who had been elected one of the representative directors of the new government in 1618, was imprisoned for having taken part in the revolution, and beheaded 21st June, 1621.)

f. 25. Anno 1609 d. 26 September.

Arms: *barry silver and sable on a pile transposed azure a tower argent loop-holed gold and topped with a spire gules rising from a mount vert* (not in R. or S.).

Eustachius Wettengel sambt seinen Söhnen Alle vonn Neuen Perg.

(The property of this rich citizen of Prague was confiscated after the battle of the Weisse Berg.)

No. XXXIII (B.M. 15736). The Album or "Hand und Wappenbuch", as the owner, Georg Andre, Freyherr von Herberstein, called it, contains autographs and arms of royal and princely personages, and of his friends and fellow students at Steyr in 1611, Strasburg 1611-1615, Würzburg and Frankfort-on-the-Main 1615, Leyden, Louvain, London 1615-1616, and Steyr 1622-1623. Among the inscriptions are:

f. 4. "Si vis omnia subicere, subice te rationi."

1616. Carolus P.

f. 5. "Non fa stimo che dell' honore."

1615. Elisabeth.

f. 5^b. 16. E. 15.

"R. M. H. A. D. W."

Fridericus Elector Palatinus.

f. 7. 1611.

"Sufficit mihi gratia tua Domine."

Arms: quarterly, 1, *per pale gold and silver an eagle displayed sable*; 2, *gold a crowned eagle displayed sable*; 3, *checky gules and sable*; 4, *gules two bends sinister gold*. Over all an escutcheon *per fess sable two silver bars and silver* (S. i. 6).

Henricus Wenceslaus Dux Monsterbergensis.

Argentorati 5 Dec. a. ut sup.

- f. 16. "1611." "Ex alta pietas mortalia despicit arte."
 Arms of Reus-Plauen (S. i. 19).
 Henricus Medius Ruthenus, D^s in Plauen.
 Argentorati, xx Dec.

No. XXXIV (B.M. 17083). Album of Sir Thomas Cuming, collected whilst at the University of Heidelberg, and at Bâle, Leyden, London, Prague, and Vienna in the years 1612-1616. Prefixed is a copy of letters from Frederick V., Elector Palatine, recommending him on the score of consanguinity to all the noble persons of the name of Buchan dwelling in Austria. Some of the entries are:

- f. 4. Arms of the Elector Palatine, surrounded by the Garter.
 "16 . E . 14 ."
 "R . M . H . N . D . W ."
 Fridericus, E. P. Heidelbergae die . . . Iulii 1614.
- f. 4. Arms of Charles I. as prince, and his portrait.
 "Si vis omnia subicere, subice te rationi."
 Carolus, P. 1613.
- f. 10^b. } Arms of Brandenburg.
 f. 11. } "1614." "A coeur vaillant rien est impossible."
 "Deo parere libertas."
 Georgius Wilhelm, Marchio Brandenburgensis.
 Dux Prussiae Iuliae Cliviae Montium.
- f. 13. Arms of Palatinate and Bavaria.
 "16 M 16."
 "In Deo mea consolatio."
 Wolfgangus Guilelmus Comes Palatinus.
 Dux Bavariae Iuliae Cliviae Montium.¹
- f. 43. (John Ramsay, Viscount) Haddington. 1613.
- f. 44. Robert Couttis. 1613.
- f. 46. Petrus (Blackburn) Abredonensis in Scotia episcopus. 1612.
- f. 47. "1616."
 Venceslaus Guilielmus, Baro à Raupa, S. Caes. Maj. à consiliis et cubiculis.
- f. 59. Tobias Matthaeus, Eboracensis Archiepiscopus.
- f. 59^b. Jo. Kinge, Episcopus Londinensis.

¹ It is interesting to note the inscriptions on ff. 10^b, 11, and 13 of Georg Wilhelm, Margrave of Brandenburg, and Wolfgang Wilhelm, Count Palatine; both were claimants to the succession of Jülich, Cleve, and Berg, and their signatures give expression to their rivalry.

- f. 64. "1616." Rodolphus Hospinianus, Tigurinus.
 f. 65. "1615." Dionysius Gothofredus, Heidelbergae 1615.
 f. 67. "1612." Alexander (Douglas) Episcopus Moraviensis.
 f. 67^b. David (Lindesay) Episcopus Rossensis.
 A(ndrew Lamb) Brechinen.
 f. 81. "1613." A. Ramsaeus, M.A. Phi. Doct. Londini, 1613.
 f. 83. J(ames Montagu) Bath(oniensis) et Well(ensis Episcopus).
 f. 87. Rob(ertus) Abbott, Sacrae Theol. Acad. Oxon. Profess. Regius.
 f. 105. Valentinus Carey, Procancellarius Academiae Cantabrigiensis.
 f. 105^b. Johannes Richardson, Theologiae Professor Regius.
 f. 136. "1613." Guil(ielmus) Pemberton, ecclesiae Dei in parocchia de Ongar
 Altà in comitatu Essexiae Minister.
 f. 143. Geor(gius Gladstanes) Sancti Andreae Archiepiscopus.
 f. 145. 1613. Gulielmus Crashovius, verbi Dei apud Templarios Londoniae
 praedicator.
 f. 146. "1612." Patricius Sandaeus in Collegio Edinburgeno Professor
 Philosophiae.
 f. 148. "1613." Johannes Prideaux, S.T.D. Colegii Exoniensis Rector,
 Oxoniae.
 f. 150. "1613." Js(aac) Casaubonus, Londini.

No. XXXV (R.C.). The Album of Giacomo Lauri, an engraver at Rome, author and engraver of "Antiquae urbis vestigia quae nunc extant. 1608", and of "Antiquae urbis Romae splendor, 1612", who also engraved after Titian, An. Carracci, and Giuseppe d' Arpino.

Unfortunately this book has been restored, as the restorer's remarks on the fly-leaf show, in the year 1687 by Anne Lefebure, "Marchant Orfevre," at the sign of the Ville de Paris at Rome, and has been badly used, many of the arms having been cut out and others painted over at the restorer's fancy. The book also contains copies of letters Lauri had received from crowned heads acknowledging the receipt, and praising the beauty, of his works, likewise many inscriptions, with shields of arms, of visitors to Rome, and some of these arms have either been wrongly blazoned or badly treated on restoration. Among the entries are:

- f. 98. "Tout avec le temps."
 Arms (S. v. 149).
 Rome den 30 Martii Anno 1622.
 Erick Rosen Krantz Jacob Son Danus.

f. 112. "Año 16 Nichts ohn Ursach 20. die 21 8bris."

Arms (S. i. 19).

Carl Fugger Freiherr von Kirchberg und Weisenhorn.

f. 164. "Integritate nil pulchrius."

Arms: *azure a chevron gules between ten crosses gold*; instead of *gules a chevron between ten crosses paty silver*.

Georgius Baro Berkeley, Anglus. 1628.

f. 167. 1629.

"Fortuna fortes metuit ignavos premit."

Arms: *gules a talbot passant gold* (should be *gold a talbot sable*) quartering Cromlin.

Gulielmus Courten, Anglus.

Romae, 22 . . .

(This is the second son of Sir William Courten (Courteen), who died at Florence in 1655.)

f. 205. "Meruisse satis."

I that have sene the ingenuitie of S^{or} Jacomo Lauri and tasted the delicious fruits of his much to be commended labours, am invited to make choice of these two words above for my Motto.

Guglielmo Yelverton, Jnglese.

Roma, 27 Aprile 1624.

f. 205^b. Inquier

At London for S^r Henry Spelman of Congham in Norffolke the bea(rer) of these armes, who will plesur yo(u) in the Antiquities of England and make you wellcum.

Arms: *sable twelve plates and two flaunches silver* (Spelman) quartering *gules a chieffermine* (Narborough), *azure a chevron between three gold leopards' heads* (Frowyk), and *gules two leopards silver* (Lestrange).

Leffte heere in Roome the laste of Desember 1619 by his secund so(n).

f. 206. Pietro Wentworth servitore del Sig^{re} Jacobo Lauro in recordanza dell amicitia scrissi quest(e) in Roma alle sedeci d'Aprili MDC 20.

Arms: *Sable a chevron between three leopards' heads gold*.

(Sir Peter Wentworth, the politician, born 1592, was made a knight at the coronation of Charles I.; on 18th December, 1641, elected to the Long Parliament as member for Tamworth; was appointed one of the Commissioners for the king's trial, but refused to act; a friend of Milton. By his will he left his property to his grand-nephew, Fisher Dilke, on condition that he and his descendants should take the name of Wentworth. A portrait of Sir Peter Wentworth is in the possession of Sir Charles Wentworth Dilke, Bart., M.P.,

whose great-great-grandfather, Wentworth Dilke Wentworth, was the last of Fisher Dilke's descendants to use the stipulated surname. *Dict. Nat. Biogr.*)

No. XXXVI (R.C.). The Album of Marcus Antonius Welser, of the patrician family of that name at Augsburg, contains inscriptions, some with the arms also, of his friends and fellow students, dated at Bourges, 1616–1618, Lyons, 17th May, 1618, Geneva, 20th May, 1618, Augsburg, 21st September, 1618, Venice, 20th October, 1618, Bologna, November, 1618, 28th October, 1619, Florence, 9th November, 1619, Siena, 28th February, 1620, Rome, 25th April and 16th May, 1620, Perugia, September, 1620, Rome, 4th April, 19th May, 1621, April, 1623, April, 1624, Iburg (the residence of the Bishops of Osnaburgh), September and October, 1625, Munich, January, 1626, Cologne, October, 1629.

As the inscriptions show, he was in the service of Eitel Friedrich, Cardinal von Hohenzollern, who was created cardinal in 1621, Bishop of Osnaburgh, 19th April, 1623, and who died 19th September, 1625. Some of the entries referring to the cardinal's death are dated at "Iburg in tempore desolationis", 26 September to 1 October, 1625. Among the entries are:

f. 1. "Amicum proba probatum ama."

The owner's arms (*per pale silver and gules a fleur-de-lis counterchanged*), name, and the date 1616.

f. 21. "Amicum nec prospera extollunt nec adversa deprimunt."

Arms (R. ii. 126).

Jucundae memoriae ergo haec sua insignia pingi curavit Dñõ Nobilis^{mo} Antonio Marco Welser, Perutiae 24 Septem. 1620, Carolus Emmanuel Abbas Madrutius Comes Avij et Chiallanti.

(Charles Emanuel Count Madruzzo, b. 5th November, 1599, Bishop of Trient in 1629, was the last of his family.)

f. 39. "Sic, sic juvat ire sub umbras."

Arms: *azure a pelican in her piety gold.*

Arthurus Lake, Anglus.

Bourges, Ann. 1616 prim. Oct.

f. 58. Dis schrieb . . . Johan Friederich von Bittlenberg genannt Kessel von Haxthausen zu Iburg in tempore desolationis den 26 Septembr. A°. 1625.

f. 62. "Per Augusta ad Augusta."

. . . Guil. Henseler. J. U. L. Ill^{mi} et R^{mi} Cardinalis Zollerani Ep̃i Osnabrugens. Cancellarius.

Iburgi ipsis Kal. Octob. 1625.

No. XXXVII (R.C.). The Album of Johann Theodor von Roth contains inscriptions, many accompanied by the arms, of his friends and fellow students

at Würzburg in 1621-1622, Freiburg 1623, Besançon, Orleans, and Bourges 1624-1625, Lyons and Florence 1626, Siena 1626-1627, and Venice 1628. Some of the entries are:

f. 21. 1624. "A coeur vaillant, rien impossible."

Arms (R. ii. 535: S. i. 25).

Henricus Alexander Baro de et in HohenRechberg, 15 Aprilis a Besançon.
Note in the owner's hand: "+regescat in pace."

f. 32. "Les Roys et les amants ne veulent point de Compagnon."

Arms (R. ii. 1121).

Jean Honoré Wurmbprand Baron escrit cecy à Bourges ce 26. d'Avril 1625.

f. 51. 1624. "A tous servir c'est mon desir."

Arms (R. ii. 817: S. i. 111).

Wolfgangus Wilhelmus à Stadion.

f. 99. "Virtutis Gloria Comes." 1624.

Arms (R. ii. 723: S. i. 133). Aureliis 25 Octob.

Johannes Philippus à Schönborn et Philippus Erwinus à Schönborn Fratres.

(This Johann Philipp von Schönborn we shall presently meet in the Album of Georg Christoph Hanseman, of Ratisbon, as Elector and Archbishop of Mainz, 1647-1673.)

f. 118. "Honneur, Santé et longue vie
Bon cheval et Bell'amie
cent Escus quand je voudray
et le Paradis quand je mouray."

Arms (R. ii. 275: S. i. 81).

Godefridus Henricus à Muckenthall, Biturigibus die 30 Novembris Anno 1624.

No. XXXVIII (B.M. King's 436). An Album, described as that of Charles Louis the Elector, son of Frederick, King of Bohemia, but which I have reason to believe belonged to his elder brother Prince Henry Frederick (1614-1629), heir-presumptive to the throne of Great Britain, and only after the latter's death to have come into the possession of, and been continued by, Prince Charles Louis. This Album, dated from 1622 to 1633, contains amongst others the autographs, some accompanied by the arms, of Charles I. and his queen Maria Henrietta, of the King and Queen of Bohemia, of William Cecil, 2nd Earl of Exeter, and Elizabeth Drury his second wife, Diana Cecil Countess of Oxford, Christian Duke of Brunswick, Frances Howard Duchess of Richmond, William Herbert Earl of Pembroke, George Villiers Duke of Buckingham, Henry Rich Earl of Holland, John Holles Earl of Clare, Philip Herbert Earl of Montgomery, and Susan Vere Countess of Montgomery.

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A later entry, dated 1699, is that of Charles Maurice, illegitimate son of Charles Louis by Louise von Degenfeld, whose children received the title of "Raugraf".

Some of the entries mentioned are as follows:

- f. 1. 1626.
"Si vis omnia subicere subice te rationi."
Carolus R.
- f. 2. "En dieu est mon esperance."
Henriette Marie, R.
- f. 3. 16 E 22.
A . E . T . C . A . C .
Frideric.
- f. 3^b. 1624.
N . V . C . Q . A . C .
Elizabeth.
- f. 4. Arms: Bohemia and Electoral Palatinate impaling Great Britain.
- f. 5^b (plate XXXII. 1). 1626. "Cor unum via una."
your highnes most humble sarvants
Exeter. Elisa: Exeter.
- f. 6 (plate XXXII. 2). Arms: Cecil Earl of Exeter impaling Drury.
- f. 7^b. Je me console en m'asseurant que le ciel possede ce que i'ay perdue.
D: Oxenford.
1626. Servante tres humble de vře Altesse.
- f. 8. Arms: Vere Earl of Oxford impaling Cecil.
- f. 9^b. 16 E 22.
"Tout pour dieu et ma chère Reine."
Christian (Duke of Brunswick).
- f. 10. Arms of Brunswick-Lüneburg.
- f. 20^b. "la plus brave conquete c'est de vaincre soy mesme."
K: Buckingham.
très humble servante de votre Altesse.
- f. 24^b. 1626. "Virtus segura sequetur."
Pembroke
y^r Highnesses most humble servant.
- f. 31^b (plate XXXII. 3). 16. "Fidei coticula crux." 25.
Arms of Villiers, Duke of Buckingham: *silver on a cross gules five escallops gold*, surrounded by the collar of the Garter.

f. 32 (plate XXXII. 4). "Adelante."

G. Buckingham.

f. 32^b. "Nil actum dum quid agendum."

Hollande.

f. 33. Arms of Henry Rich (second son of Robert Earl of Warwick), Earl of Holland: *gules a chevron between three gold crosses botony, a crescent for difference*, surrounded by the collar of the Garter.

"Ditior est qui se."

f. 34^b. "Mihi quid nisi vota supersunt."

Y^r highnes late most glorijs brother Prince Henry most obliged and your Highness most humble servant

Clare.

f. 35. Arms of John Holles, first Earl of Clare.

"Perdidi sed inveniam."

f. 38^b. "Turpis sine pulvere palma."

Montgomery.

youre Hinesses most humble servant.

f. 39. "The more I love the more I serve."

S. Montgomery.

No. XXXIX (R.C.). The Album of Andreas Pramer contains inscriptions and arms of his friends, dated at Paris, Orleans, Saumur, Montpellier, Toulouse, in the years 1632 and 1633, and a few at Florence and Milan in 1634. The following are some of the entries:

f. 25. "Principibus placuisse viris non ultima laus est."

Robertus Southwell, Hibernus ex Kinsale.

f. 26^b. Arms of Hanau Münzenberg.

f. 27. 1633. "Pour parvenir j'endure."

"Tandem bona causa triumphat."

Johannes Ernestus Comes in Hanau.

escript à Paris, le 27 du May.

f. 29^b. "Gloria non me praeda trahit."

Franciscus Hartardus Comes à Schwartzenberg.

Paris, 27 Augusti 1633.

f. 30. Arms of Schwartzenberg (R. ii. 745).

No. XL (R.C.). This Album, consisting of an interleaved copy of Johannes Sambucci's *Emblemata*, Antwerp, 1569, has been used as an Album from 1601 to 1612 by Georg Emrich, and from 1639 to 1654 by Heinrich Runge, who from 1639 to 1640 was assistant to a "plague barber-surgeon" at Dantzic, and later on

an independent barber-surgeon at Kunau; it contains inscriptions of Runge's friends at Breslau, Danzig, and Kunau in the years 1639 to 1654, and the most interesting one is that of his eight co-assistants,

"Gotthard Gnadesfriedt von Görlitz,
Zacharias Hoffman von Leipzig,
Hans Preussel von Hall aus Saxen,
Michel Mongzen vonn Braunzweig,
Paul Rose vonn Barrleben,
Christian Wiegandt vonn Kiel,
Hans Farnberg von Osnabruck,
Hanns Musick von Copenhagen,"

who describe themselves as "dieser Zeit Allesambt bey Herrn Michel Branden Bestalten Pestbarbiern in Danzig Dienende". On the preceding page is their master's inscription, dated 22nd March, 1640, "Michel Brandt, Bürger, Barbierer und Wundartz dieser Zeit pestilentialis."

No. XLI (R.C.). The Album of Stephanus Tucher, "Patricius Noribergensis" as he calls himself on the title-page, is in its original sharkskin binding; it contains inscriptions, a few with shields of arms, of his friends and relations at Nuremberg in 1646, and of his fellow students and learned men at the University of Strasburg in 1647-1649.

The following are a few of the entries:

f. 47. 1647. "Fortiter mori melius est quam turpiter vivere."
Gustavus Adolphus Comes Nassoviae Sarraepont.

f. 102. "Omnia cum Deo et nihil sine eo."
Arms (R. i. 876: S. i. 205).

Albrecht Haller von Hallerstein des Eltern gehaimen Raths.
Anno 1646 den 30 Apprilis. Nürnberg.

f. 114. "Nihil hominibus praestantius, nihil utilius ordine."

Arms: *silver a bend sable and three silver chess rooks on the bend* (R. i. 526: S. i. 206).

Christoff Derrer von und zu der Untern Burg.
Nürnberg d. 25 April A° 1646.

f. 119. "Gewiss ist der Todt und der Tag
Die Stund aber niemandt wissen mag
Darumb leb alzeit darbei
Alss wenn diss dein letzte Stundt sey."
Arms (R. ii. 947: S. i. 205).

Carl Tucher der Elter, den 5 April im 1646 Jahr.

Note in the owner's hand: Obiit 30 November 1646.

- f. 142. "Quae neglecta jacent pondus habere solent
Saepè et parvis gratia rebus inest."

Melchior Sebizius Med. Doct. et Professor, Com. Palat. Caes. et Reip.
Argent. Archiater. Universit. p. T. Rector, scrib. 23 Iunii 1648.

- f. 147. "Et fata habent suas horas et moras."
"Gottes Willn, Meine Hoffnung."
Argentorati 24 Junii A. d. 1648.

Joh. Rebhan, Jurispr. D. Prof. P. p. t. Colleg. Jurid. Decanus.

- f. 149. "Omne nimium naturae inimicum."

Joh. Rudolphus Saltzmann Med. Doct. sen. Reipub. Physicus ordinar.
Universitatis Profess. publ. et p. t. fac. Med. Decanus, Argentorati scripsit
8 Cal. Julii Anno 1648.

No. XLII (R.C.). An Album important from an historical point of view is that of Georg Christoph Hanseman, a doctor of law and councillor at Ratisbon; it contains inscriptions, with the arms of many electors, archbishops, bishops, princes of the Holy Roman Empire, and of their delegates and councillors, attending the Imperial Diet at Ratisbon, called by the Emperor, Leopold I. in 1662, in consequence of the war against the Turks.

There are also the inscriptions and arms of the papal delegate, and of the ambassadors of the kings of France, Sweden, Denmark, and Norway.

Amongst the entries are the following:

- f. 15. "Sit Nomen Dñi Benedictum."

Arms: Caraffa della Spina (R. i. 371) under a cardinal's hat.

Carolus Card^l Carafa.

Ratisbonae, a. d. 1664.

f. 15^b. Arms: Bishopric of Würzburg quartered with Mainz and Worms; inescutcheon: v. Schönborn.

- f. 16. 12 Martii 1664.

Joēs Philippus El. A. M.

(Johann Philipp von Schönborn, Bishop of Würzburg 1642, Archbishop and Elector of Mainz 1647, Bishop of Worms 1663, †1673.)

- f. 16^b. Arms: Archbishopric of Trier quartering von der Leyen.

- f. 17. "Sincere et Constanter."

Carolus Casparus Archi Ep̃s. Trevir. Elector.

Anno 1664 3 Aprilis.

(Carl Caspar von der Leyen became Archbishop and Elector of Trier in 1652, †1676.)

- f. 19^a. Electoral Arms of Saxony.

- f. 20. "Sursum Deorsum."
Johannes Georgius Elector.
- f. 49. 1664.
Arms: quarterly 1 and 4 Bishopric of Strassburg, 2 v. Fürstenberg, 3 Werdenberg quartering Heiligenberg.
Franciscus Egon Ep̃s Argentinensis.
franz Egon von Fürstenberg, Bishop of Strasburg, 1663, †1682.
- f. 51. 16. "Crede Deo Confide Deo, Spes Omnis in Illo" 63.
Arms: Bishopric of Worms quartering Kratz von Scharffenstein.
Hugo Eberhardt Ep̃s Wormat. praepositus Trevirensis.
- f. 56^b. Arms of Württemberg.
- f. 57. "1664." "Tout avec dieu."
Eberhard H. z. W.
- f. 59. 16 "Un bel morir tutta la vita honora" 62.
Arms: Abbey of Fulda quartering von Gravenegg.
Joachimus Abb. Fuldensis S. R. J. P. Archi: Cancell^{us} Augustae p. Germ: et Gall^{iae} primar. J. L. Baro de Gravenegg.
(Joachim von Gravenegg (Graveneck), Prince Abbot of Fulda, 1644-1671.)
- f. 71^b. Arms of Baden.
- f. 72. "Pro fide et Patria."
9 Aprill 1664.
Leopoldus Princeps Badensis.
- f. 79. 1664. 24 April.
Arms of Hessen.
Georgius Christianus Landgravius Hassiae.
- f. 84^b. Arms of Holstein.
- f. 85. die 4 Octob. A^o 1664.
Johannes Adolphus Dux Holsatiae.
- f. 86. 1665. "Fidelitate et Constantia."
Arms (R. ii. 457: S. iii. 22), surrounded by the collar of the Golden Fleece.
Franc Eus^{us} Comes de Petting Aurei Velle^{us} Eques, S. C. M. à Secretioribus Consiliis et ad Catholicissimos Reges Philippum IV. gloriosae memoriae et Carolum Secundum ordinarius orator.
- f. 87. Arms: *azure an anchor silver, on a chief gules three golden suns* (not in R.).
Robertus de Grance Christianissimo Galliarum Regi a Secretioribus Consiliis nec non ad Comitia Imperii Ratisbona habita Sacra Sua Ma^{est} Plenipotentarius.
- {f. 119. Arms (R. ii. 782: S. v. 3).
- {f. 120. 16 A. 64. "Christo Duce."
Joannis Joachimus Comes à Sinzendorff.

- f. 122. "Vive ut Vivas."
 Ratisponae $\frac{9}{29}$ Aprilis Anno 1665.
 Maximilianus Erasmus Comes à Zintzendorff.
- f. 123. Arms (R. ii 1146: S. i. 23) (Zinzendorf zu Pottendorf).
- f. 158. den 8 Augti. 1664.
 "Nicks onmogelig aber schwer."
 Arms (R. i. 181: S. i. 125).

Phip^s Engelbert Freiherr von Bernsau . . . Churfürstl. Durchl. zu Cöllen
 Cammerherr und Oberstl. zu Fus.

In the second half, particularly the last quarter, of the seventeenth century the style and the purport of the Album changed for the worse; the heraldic paintings became fewer and fewer, and those we meet with are mostly of poor execution, and towards the beginning of the eighteenth century they have almost disappeared. Their place in the Students' Albums was taken by representations of their various amusements, feasting, drinking, etc., and the inscriptions became full of obscenities. In the Albums of other classes the heraldic paintings had made room for miniature portraits, and towards the end of the eighteenth century to silhouette portraits of the contributors.

One of the causes of the decline of the heraldic Album was its use by roving adventurers and vagrants as a means of making a living; they travelled through the country with their Albums, approaching and pestering any one they got acquainted with for his autograph and a contribution towards the painting of the arms, which contribution, I need hardly point out, was mostly spent in some other way.

In one of his letters to his son, Lord Chesterfield writes: "Make the same enquiries, wherever you are, concerning the revenues, the military establishments, the trade, the commerce, and the police of every country. And you would do well to keep a blank paper book, which the Germans call an Album; and there, instead of desiring, as they do, every fool they meet with to scribble something, write down all these things, as soon as they come to your knowledge from good authority."

In saying this, he could only have had in his mind the Album of his period; had he been acquainted with those I have mentioned, had he seen the entries of all these learned men, professors and statesmen of the sixteenth century, the "scribble" of Casaubon, Milton, Camden, Galileo, Kepler, Giovanni da Bologna, Rubens, and so many other celebrated men, he would probably have suppressed that sneer.

XII.—*On the Stone Bridge at Hampton Court.* By C. R. PEERS, Esq., M.A.,
Secretary.

Read 16th June, 1910.

THE Palace of Hampton Court is a building to which even the most unimaginative person cannot be indifferent. Built by one of the greatest and most splendid of English statesmen, and completed by one of the most magnificent of our kings, it has always been a royal pleasure-house, recalling rather the intimate private life of our sovereigns than their formal acts of state. In four years' time it will complete its fourth century of existence, and though much of its first splendour has long perished, it remains essentially a royal building; no one could take it for anything but a palace. This being so, its careful preservation is a matter of public interest, and needs no urging in this room, but for this very reason it has been thought well to lay before the Society an account of an important piece of work now being carried out there, namely, the excavation and repair of the moat and the stone bridge which spans it at the west or entrance front of the palace.

The First or Base court, into which the entrance gateway opens, is the work of Wolsey, and remains in great part as he left it. Its western range presents a façade 221 feet long, flanked by projecting wings, an addition to the original design, between which stretched a moat 50 feet wide.

In the middle of the façade is the gatehouse, which in its present form dates only from 1773, and at this point the moat is spanned by the stone bridge which forms the subject of this paper. It dates from 1535-6, succeeding a bridge built by Wolsey some twenty years earlier, which was probably of wood, but no record of it has been preserved. The stone bridge remained in use till the time of William III., when its parapets were destroyed, the moat filled in, and the bridge covered over. The bridge probably disappeared from view about 1691, and though its existence can hardly be said to have been forgotten, nothing more was seen of it till 1872, when in the course of drainage operations part of its east end was uncovered. Nothing more was done at the time, and it was not until last year that a scheme for its complete clearance, after a burial of nearly 220 years, was put into execution. For this we are indebted to Mr. Lewis Harcourt, First Commissioner of Works, to our Fellow, Sir Schomberg McDonnell, Secretary of the Office of Works, and to the late Mr. Fitzgerald, who for some years before his death most ably carried on the work of the Inspectorship of Ancient Monuments;

nor should we fail to record our grateful remembrance of the keen interest taken in this, as in so many other archaeological matters, by our late patron, H.M. King Edward the Seventh.

The bridge is now completely cleared (plate XXXIII). As its name implies, it is entirely faced with wrought stone, and is of four spans, each 8 feet wide in the clear, with cutwater piers 4 feet 6 inches thick, from which the four-centred arches spring. It is 25 feet wide between the splays of the cutwaters and has ten chamfered ribs on the soffit of each arch. One course of the original masonry is left above the arches in places, and on the cutwaters stand the stumps of octagonal shafts which rose above the parapets of the bridge and carried embattled capitals, on which were set stone beasts holding shields of the arms of Henry VIII and Jane Seymour, who became Queen in May, 1536. The masonry is of excellent quality and in very good preservation; the core is of red brick, and the facing stone comes from Headington in Oxfordshire, as appears from the building accounts for September, 1535.

Payd to John Rychemonde of hedyngton quarreman for 542 tonnys of free ston reddyscapolyd and delyv'yd at hedyngton quarre at xijd the tonne.

Also payd to Rich. Aman of the same, quarryman, for 62 tonnys 1 q^r of freeston . . . at lyke pryce.¹

That the work on the bridge was begun in this month may be gathered from the accounts, in which the first references to the bridge now occur, as at

p. 353, payment to 14 labourers "standyng in the wat' w^t ladyng owt of the same in the fundacyon of the ston brydge goyng in to the place";

p. 371, shovels and spades for the foundations of the bridge;

p. 374, scoops and pails "to lade the wat' owt of the fundacyon of the ston brydge goyng into the place";

p. 363, bricklayers "forseyng up the peers of the ston brydge";

p. 359, freemasons making arches for the stone bridge.

There are similar entries in October, 1535, the freemasons being at work setting the arches, and the bricklayers levelling them; in November is further mention of the arches, and the bridge was probably completed, save for the carvers' work, in this month. The building was pushed on rapidly, and payments for overtime continually occur, the workmen

workyng in theyre owre tymys and drynkyng tymys . . . for the haystye expedycon of the same.

Next year (1536) under the dates 23rd September-21st October, occur the entries showing the completion of the work.

¹ Misc. Books: Exch. T. R. 243, p. 381.



HAMPTON COURT: THE STONE BRIDGE AS EXPOSED BY EXCAVATION, 1909

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Misc. Books : Exch. T. R. 244, p. 75 : paid to Harry Corant (of Kingston, carver), for makyng cuttyng carvyng and ffeneshshing of vj beests in freeston of the kyngs and the quenys as a boull a greyhonde a dragon and Iunycorne a lyan and a pantt' baryng the kyngē armes and the quenys standyng uppon the ston brydge before the Kyngē gate at xxvj^s the pece.

Also paid to Ric. Rydge (aforsaid) for lyke cuttyng carvyng ffeneshshing and makyng of vj beests of the kyngē and the quenys and jall and Iunecorne a dragon a lyan a greyhonde and a pantt' baryng the kyngē arms and the quenys standyng uppon the kyngē brydge aforsaid at lyk pryse.

Items for ironwork, "pyns or staves servyng for the beestes" follow, and for setters working overtime in setting up the beasts, "for the hasty expedycon of the same."

The bridge being finished, the wall bounding the moat on the west was next taken in hand, its foundations being dug in April and May, 1538. This wall has now been uncovered, and except for the loss of its upper courses and embattled parapet, is in good condition. It is of red brick, battering slightly for rather more than half its height, and remains to within a foot of the present ground level. A curious point is that to the north of the bridge it is 3 feet 2 inches thick at the top, but to the south it is 4 feet 3 inches thick, the extra thickness being on the west side. At its south end a winding flight of brick steps leads from a now blocked doorway in the south wing of the main front to the moat, by an arch in the moat wall.

That a moat existed before the building of the stone bridge is evident from the accounts which I have quoted, but there is nothing to show whether Henry made it wider, or followed the old lines. It is quite likely that the site was moated long before it came into Wolsey's hands, when it was the site of a *camera* of the Hospitallers, and Wolsey may have retained the lines of the old moat. At any rate, its course as laid down on the plan I exhibit, a very interesting one belonging to the Office of Works, probably of Wren's time, and showing the block plan of his buildings in an incomplete state, was that which existed in Wolsey's day, and survived in part to modern times, the last section of it having been filled in within living memory. Its water level was considerably higher than that of the Thames, and it was fed by the Longford River from the east. It ran under the buildings at the north end of the west front, the brick arches through which it entered the west moat being now again revealed (plate XXXIV), and must have had a sluice at the south end towards the Thames, for draining off its water, though no trace of anything of the sort is now to be seen in the south wing of the west front. A sluice is however shown in the required position on the banks of the Thames, in Wynegaarde's drawing of 1558. I have already mentioned that the wings at either end of the west front, though of earlier date than the wall of the

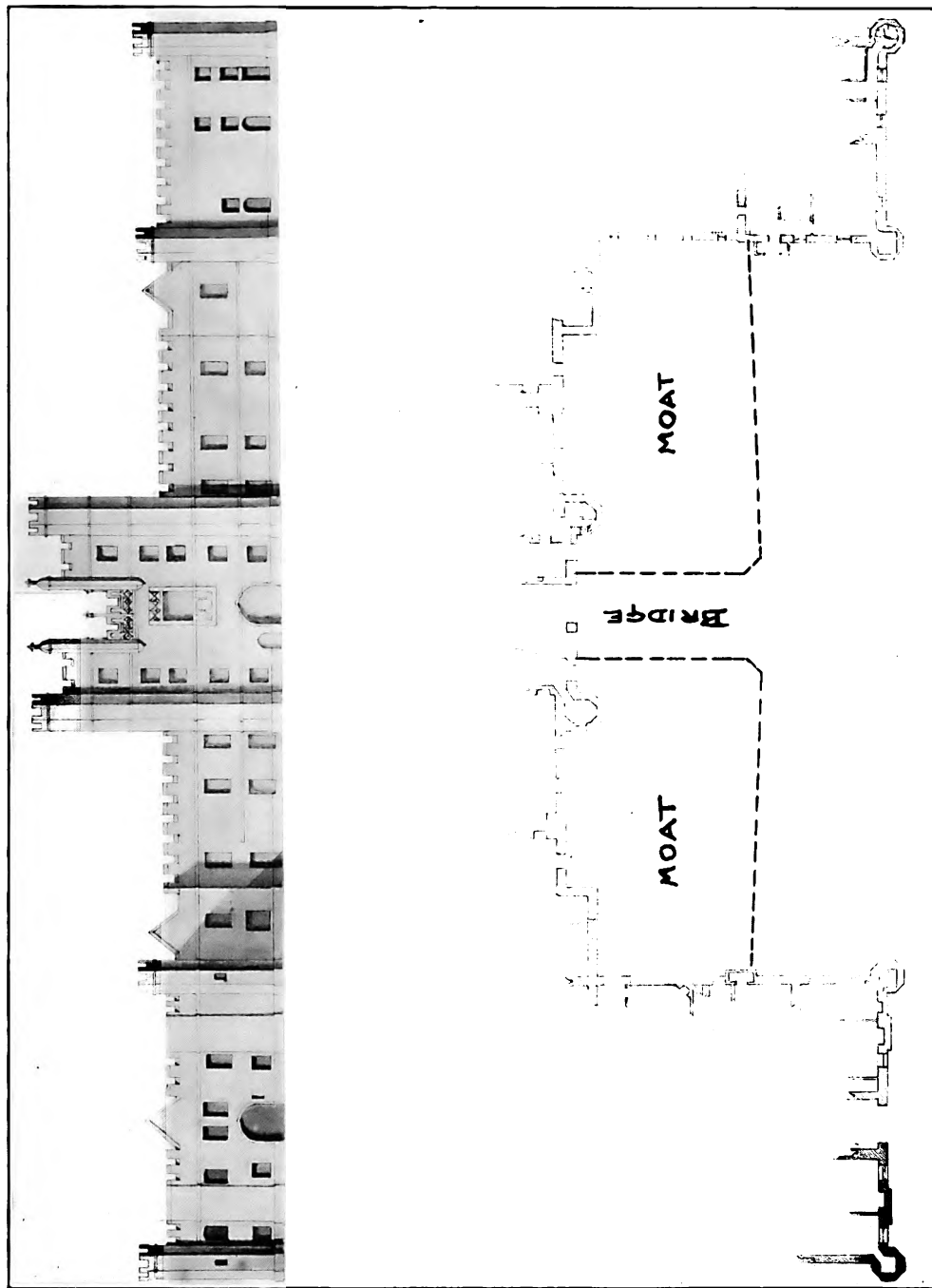
moat, are additions to the original design, so that there may have been in the first instance a more direct communication between moat and river. So much for the historical evidence bearing on the story of the moat and bridge ; the question of their treatment by the present generation must now be considered.

That this is a case where a careful and adequate restoration (I use the word advisedly) is desirable cannot, I think, be seriously disputed. Apart from the completeness of the documentary evidence, enough remains, or has been found in the rubbish which filled in the moat, to leave no doubt as to the character of the destroyed parapets and pinnacles of the bridge. Their actual proportions and certain details of treatment must indeed be decided by our twentieth-century judgement, but of this I trust there will be no reason to be ashamed.

The parapets were embattled (crest and vent, the old builder called it), and a coping stone found on the spot gives their width and section. I reserve for the moment the evidence of old drawings.

The size of the pinnacle shafts is also to be deduced from fragments, and one of the embattled capitals remains as a pattern for the rest. Similar pinnacles, but of more elaborate character, ornamented the Great Hall, and their modern copies are useful in judging of the general effect.

It will be remembered that twelve beasts are mentioned in the accounts, that is, six on each side of the bridge. Of these it is clear that the pinnacles rising from the three complete piers of the bridge accounted for six, and those on the half-piers at either end for four more, leaving two to be otherwise accommodated. The foundations at the west end of the bridge provide the answer to this question. They splay outwards in such a way as to make it clear that the parapets on either side of the approach to the bridge did the same, and the two required pinnacles must have stood at the outward ends of the splays, the parapets stopping against them. An interesting confirmation of this is given by the fact that the spacing of the parapet works out with the most exact symmetry on this basis, but with one "crest" between the outer pair of pinnacles, instead of two as on the bridge. But here a new point comes up for consideration. The west front of the gatehouse is not that for which the bridge was designed, but dates only from 1773, and does not reproduce the original arrangement. What this was may be seen from a drawing made about 1730 (plate XXXV). From this it may be observed that although the bridge was set centrally with the gatehouse passage, the provision of two archways at the entrance of the passage, a wide one for carriages and a narrow one for foot-passengers, made it impossible that either opening should be set on the axial line of the passage. Over the entry was a fine room with a projecting oriel window on the west, and the sixteenth-century architect preferred to set this window over the larger archway rather than on the middle line of the gatehouse. The parapets of the bridge abutted on the gatehouse at a con-



HAMPTON COURT: THE WEST FRONT c. 1731

From a drawing in possession of H.M. Office of Works. The lines of the bridge and moat are added

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venient distance on either side of the two archways, and the two pinnacles, or rather half-pinnacles as they would have been, would be set quite conveniently against the blank wall face on either side.

But when George III. refaced the gatehouse, the need for an unsymmetrical arrangement no longer existed. The bridge had long been buried and the moat filled in, and a wide sweep of gravel led up to the gatehouse, which was accessible for the whole of its width. So the love of symmetry, never more rampant than at that time, was allowed full play. The carriage way was taken through an arch set on the centre line of the gatehouse, and a smaller archway for foot-passengers was provided not on one side only, but on both.

On either side of the main archway half-octagonal pilasters have been added in quite modern times, when the stone vault of the gateway was set up, and come down exactly on the line of the original pinnacles of the bridge, taking up the space once occupied by the two half-pinnacles set against the gatehouse, so that there is now no room to replace them, unless the pilasters are cut away for the purpose.

This, however, is to put into practice a principle which has never yet found acceptance in these rooms, namely, restoration for restoration's sake. The tangible evidences of history pass away all too quickly as it is, and need no help from us to speed their passing. The gatehouse of George III. is a far less interesting and beautiful building than Wolsey's gatehouse which it replaces, but it is sound and serviceable, a very good piece of brickwork, and not without interest as imitation Gothic of a day when Gothic had a merely dilettantist vogue. It is part of the history of the place, and should not be altered without good and cogent reasons. One alteration, indeed, common sense suggests. The small archways on either side of the main entrance, now opening only to the moat, are useless, except to be converted into windows, and there are several other modern doorways in the front and wings which are now equally so.

So that the reproduction of the upper works of the bridge must stop at this point, that only ten of the twelve pinnacles, with their beasts, can be renewed.

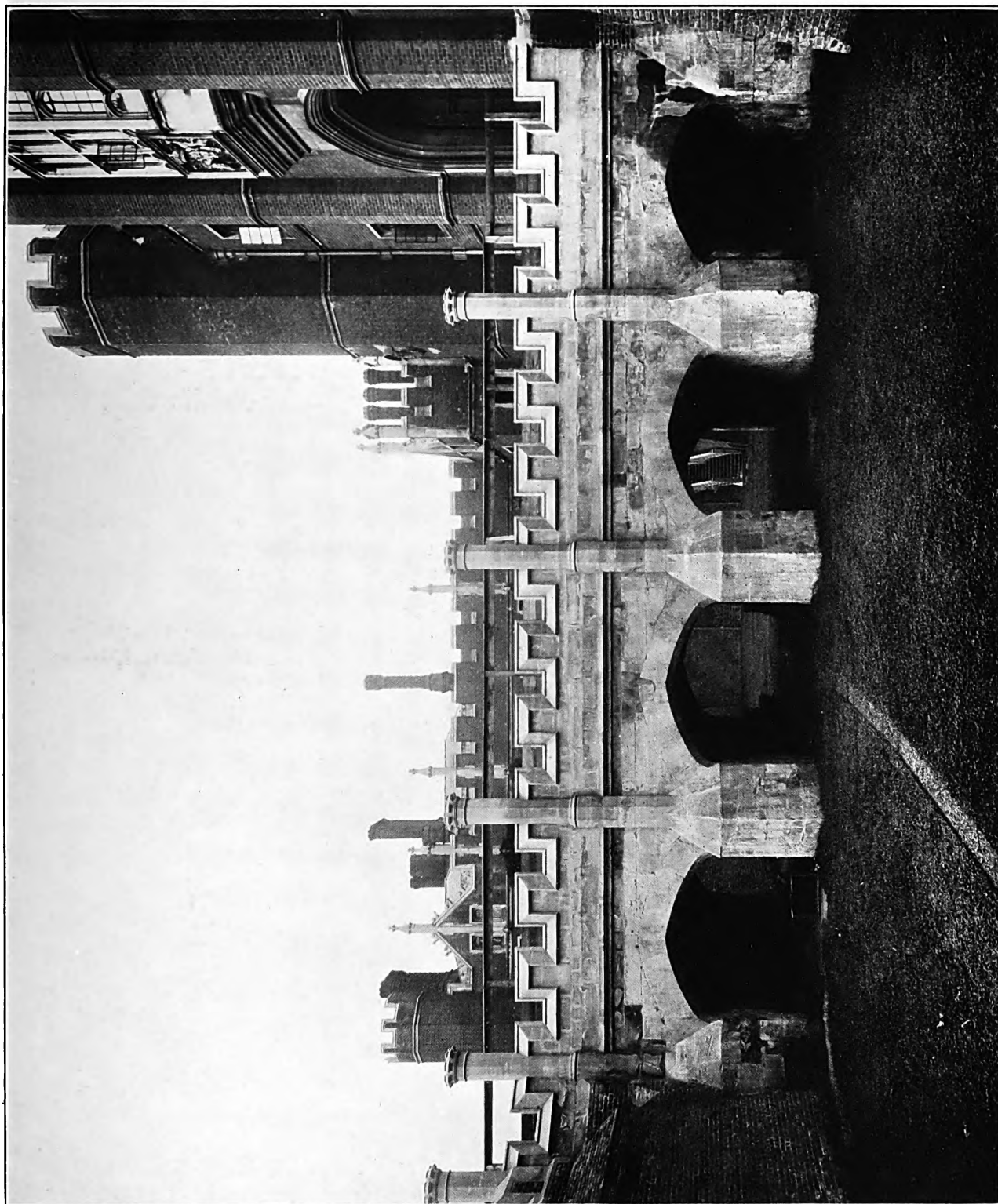
To come to the beasts themselves. It will be remembered that in the accounts they are described in two sets of six each, the sets being identical except that the bull in one is replaced by "and jall" in the other. They are the king's and queen's beasts, bearing the king's and queen's arms, and it is not unreasonable to suppose that six of them bore the king's arms and six the queen's. The greyhound, the lion, the dragon, and the bull are clearly the king's beasts, all having been used as his supporters at various times, the dragon standing for Cadwallader, the greyhound for Beaufort, the lion for England, and the bull for Clarence. Now the queen's supporters were a lion with a prince's crown and an unicorn. As to the jall or yale, he is a rare and strange animal partaking of the nature of the heraldic antelope, that is to say,

wearing horns and a large pair of projecting tusks: he varies, however, from the antelope in having rams' horns and a short fluffy tail, and he is *silver bezanty*, that is, white with yellow spots. He is one of the supporters of the Dukes of Somerset, and appears in St. George's Chapel at Windsor on the stall plate of Sir John Beaufort, Earl and Duke of Somerset, *c.* 1440, and is faithfully reproduced in Mr. Hope's beautiful book on the *Stall Plates of the Knights of the Garter*.¹ His appearance at Hampton Court seems to be due to the following cause. Henry Fitzroy, the illegitimate son of Henry VIII, and his father's special favourite, was created Duke of Richmond and Somerset, and bore the yale as a supporter of his arms. He died 22nd July, 1536, or only a few months before the date of the accounts with which we are now occupied. The queen's brother, afterwards the Lord Protector of Edward VI. her son, was in the household of Henry Fitzroy, and himself became Duke of Somerset, with a grant of the queen's arms and supporters, in 1547. The connexion is suggestive, and though I can give no definite evidence on the point, Henry VIII. may have given to Jane Seymour some of his dead son's honours, and the "yale" may have become one of her beasts. But on the other hand it is just as likely that Henry took the yale himself in memory of his son, or as being a Beaufort beast, and an item for making three beasts for the fountain in the inner (now the clock) court goes to strengthen this view:

Also paid to the forsaid Harry Corant for makynge of thre of the kyngs beests in tymbre, and hartt and jall and a boull serving to stan upon the fontayne in the Inner Court by convencion at 5s. the pece.

There remains the panther. There is an entry of this time for the making of beasts in the garden: a payment to Harry Corant of Kingston, the carver of six of the beasts on the stone bridge, for thirty-eight "of the kyngs and quenys beests in freeston baryng shylds wythe the kyngs armes and the quenys . . . to stand a bowght the ponds in the pondyerd at 26/- the pese": the same price as those on the bridge, and doubtless beasts of the same description. The beasts are given thus: "fowre dragowns sey x lyones: fyve grewhounds fyve hertes: fowre jalls sey x panthers: thre bowlls an fyve iunycornes." The dragons, lions, greyhounds, and bulls are here the king's beasts, and the harts and "jalls" are also so described in the entry just quoted; of the other beasts the unicorns and some of the lions should be the queen's, and it seems likely that the panthers are so also. Luckily there is one more piece of evidence on the point. A number of

¹ Mr. Hope has since pointed out that the yale occurs as one of the supporters of the arms of the Lady Margaret Beaufort, mother of King Henry VII., on the contemporary gatehouses of her two foundations of St. John's College and Christ's College at Cambridge; the yale also forms the device of the original seal of the *custos* or master of Christ's College. The connexion of the yale with King Henry VII. and his son King Henry VIII. is thus clearly established.



HAMPTON COURT: THE STONE BRIDGE AS RESTORED, 1910

The beasts standing on the pinnacles not yet added

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entries of this date refer to the changing of the arms and badges of Queen Anne [Boleyn] to those of Queen Jane [Seymour], and among the list of alterations is the following:

Payd to harry Corant aforsaid for alteryng of 10 lybartts unto the panter, for new makyng of hedds and the taylls, servyng for the Kyng's new garden.

Now the "lybartt" was one of Anne Boleyn's supporters, and it seems reasonable to infer that the "panter" into which it was converted by altering its head and tail, was one of Queen Jane's beasts.

If this chain of reasoning holds good, it seems that the dragons, bull, and greyhounds, and probably the "jall" on the bridge, bore shields of the king's arms, and the panthers and unicorns the queen's arms, while the lions were divided between them. The panels of arms on either side of the west door of the chapel afford a useful contemporary model for these shields.

It remains to consider the treatment of the walls of the moat. They were finished with battlements, on the testimony of the accounts and of drawings, but their thickness at the top, as now existing, 3 feet 2 inches on the north side, and 4 feet 3 inches on the south, is far too great to have been carried up into the battlements. The position of the western pair of pinnacles on the bridge, which seems certain on the evidence which remains, requires that the battlements of the moat should be set on the outer side of the north wall; and it is difficult to imagine that the battlements on the south wall could have been set in any other than the same line, in spite of its extra thickness. The remaining width of the wall, towards the moat, must therefore have been finished with a brick splay sloping up to the battlements, which may have been 12 inches thick like those of the bridge. At any rate, it seems reasonable to make them correspond with those of the bridge, in the absence of evidence to the contrary. These battlements had, as it seems, a "skew in freston" below them, as have all the battlements on the palace walls, that is, a splayed stone course capping a thickening of the wall. The entry referring to this is dated July, 1536, a somewhat puzzling date, as from the other entries already quoted it appears that the foundations of the walls of the moat were not laid till 1538. But any one who has worked at old documents or old drawings will know that a complete harmony of evidence is seldom attainable; it may be that only the start of these walls, adjoining the bridge, was built in 1536, and the rest undertaken after an interval.

I have mentioned the evidence of old drawings. In the case of Hampton Court there are only two to which I need now refer, one by Antony Wynegaarde, of 1558, and the other by Dirk Stoop, showing the bridal procession of Charles II and Catherine of Braganza approaching the palace. In both the battlements on the moat and bridge are shown, but neither show any pinnacles on the bridge,

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though Dirk Stoop decorates palace and moat alike with small obelisks rising from the battlements, which certainly were never there. Other obvious inaccuracies occur in both drawings, notably the setting of the window over the entrance in the middle of the gatehouse, and not to one side as it actually was. And many small details, which still exist, are entirely left out, so that it is not well to base anything more than a general argument on such points.

There is only one more matter to which I need now draw your attention, namely, the moat itself. Its bottom is about 14 feet 9 inches below the present ground level, and it may be supposed to have had about 6 feet of water in it in ordinary circumstances. What has been done at present is to put down some 2 feet of soil on the bottom and to sow it with grass seed. This is now sufficiently grown to show the effect of such a treatment, and it will be seen that the dignity of the palace front is enormously increased by the exposure of the sloping bases of the walls. I think that there will be but one opinion as to the debt which we owe to the present heads of H.M. Office of Works, for the manner in which the work has been carried out.

I must not here omit to express my thanks for the great help which I have received from various members of that office in the preparation of this paper, especially from Mr. Baines, who has placed at my service a long set of extracts from the building accounts, which have thrown much light on several doubtful points. And I also have to thank our Fellow, the Rev. E. E. Dorling, and our Assistant Secretary, Mr. Hope, for their very valuable assistance on questions of heraldry; and Mr. L. F. Salzmänn for verifying at the Record Office the extracts from the building accounts.

XIII.—*Excavations about the Site of the Roman city at Silchester, Hants, in 1909.*
By W. H. ST. JOHN HOPE, Esq., M.A., and MILL STEPHENSON, Esq., B.A., F.S.A.

Read 23rd June, 1910.

IN submitting to the Society our twentieth and final report on the excavation of *Calleva Atrebatum*, it may be pointed out that for the first time our work during the past season has lain altogether outside the Roman town. We were able in 1908 to bring to an end the excavation of the whole of the 100 acres within the wall, but, as was then foreshadowed, there still remained to be examined the outer defences and the ditch encircling the wall itself. This formed the work of 1909.

It was begun on 21st May, and carried on as uninterruptedly as the weather would allow until 20th November, under the direction of Mr. Mill Stephenson and Mr. J. Challenor Smith, to whom all praise and thanks are due for the patient care and time they have devoted to the work.

The excavations were begun just outside the south-west point of the town by cutting a section through the ditch there and continuing its line directly outwards to and through the outer entrenchment and its ditch, a distance of nearly 1,000 feet. A second cutting through the outer work was made at some distance eastwards of the first, and three others on the north-west of the town, but as all yielded similar results it was not thought necessary to make any more.

The rest of the investigation was devoted to the ditch or ditches encircling the wall. These were cut at a number of points along the north, west, and south sides of the town, in front of the north and south gates, and so far as was possible before the west gate also.

It will be more convenient to deal first with the sections cut through the outer defences.

These remain in a more or less perfect state all round the western half of *Calleva*, but on the east there are no definite remains, possibly through their coinciding with the Roman line of defence. On the north and west the remaining lengths of the bank stand about 6 feet above present level, but on the south there are places where the bank is considerably higher, with a corresponding deeper and wider ditch.

This ditch has been cut in the thick bed of gravel, which, with occasional layers of sand, underlies the whole site, and the excavated material thrown up on the inside to form a continuous bank (fig. 1). Along the west side the ditch was 40 feet wide and 8 feet deep, with a more or less flat bottom about 4 feet across. Owing to the unshifting nature of the excavated material the bank, where undisturbed, practically retains its original contour, but the sections cut did not reveal any traces of palisades or other wooden defences; the outer layers had, however, been much disturbed by a prolonged growth of trees and bushes.

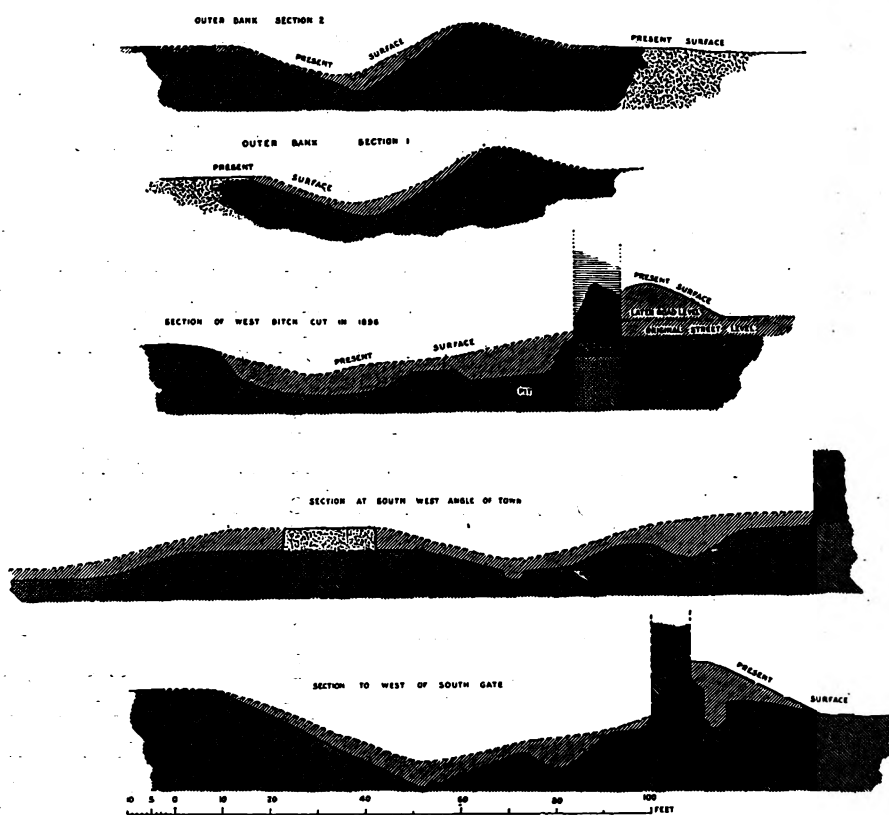


Fig. 1. Sections of banks and ditches at *Calleva*.

The sections were also singularly barren of traces of the people who wrought the work. Nowhere in the bank was anything found to give any indication as to its age, and a few fragments of rotten pottery were all that was found in the ditch.

It has generally been assumed that the entrenchments outside the walled portion of the site are of earlier date than the town defences, but the only clue to the date of the outer bank is afforded by the discovery, a few years ago, by our colleague, Mr. J. B. P. Karslake, in the higher section to the south-west, now called Rampiers, of a number of burials of the Roman period, consisting of urns with cremated remains (see *post*).

It may therefore be taken for granted that the outer works are in all probability pre-Roman, but whether they belong to the Late-Celtic period or even to the Bronze Age there is so far nothing to show. The area they enclosed was a considerable one, with a fair supply of water, and for the most part easily defensible.

The sections made at the base of the town wall on its north, west, and south sides revealed an order of things totally different from the simple continuous ditch and bank of the outer works.

During the excavations of 1896¹ a trench was cut completely through the ditch on the west side, just to the south of the newly discovered lesser west gate (see fig. 1). At this point there was no ledge or berm at the foot of the wall, but

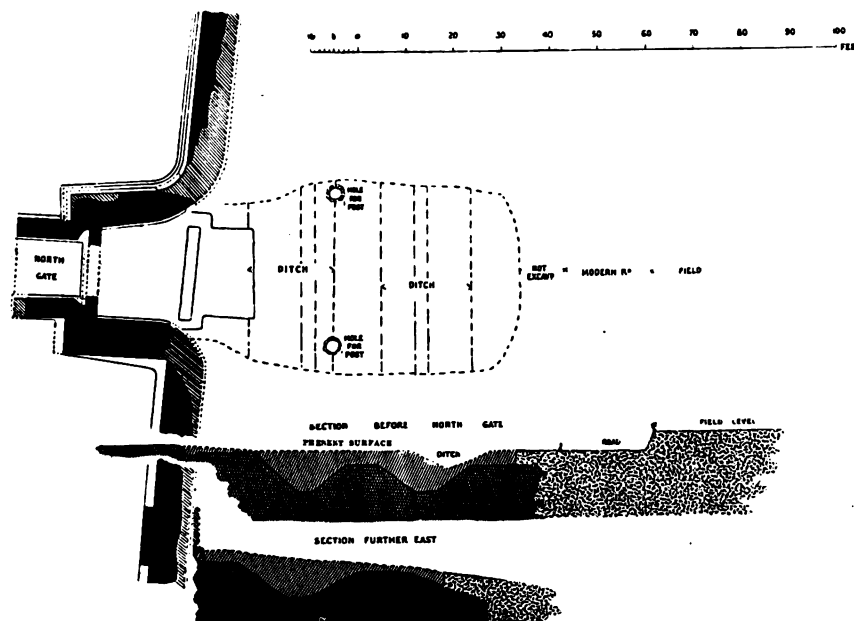


Fig. 2. Sections of the ditch outside the north gate of *Calleva*.

the ditch began almost abruptly at the plinth and consisted of a cutting 26 feet wide, for the most part flat bottomed. There then intervened a sort of broad bank $9\frac{1}{2}$ feet across, and beyond that a somewhat irregularly cut second ditch about 40 feet wide. The total width was about 80 feet, with depths varying from 9 feet in the inner ditch to over 12 feet in the outer. The top of the bank was about 7 feet below the ground level.

Two sections on the north side which were made last year, one in front of the north gate, the other some little distance to the east of it, show the same arrangement of two ditches separated by an intermediate bank, but in both cases there seems to be a distinct berm from 8 to 10 feet or more in width at the foot of the wall.

¹ *Archaeologia*, lv. 427, fig. 1.

A number of sections cut on the western side of the town (see fig. 3) apparently disclosed a similar state of things, but a more careful study of them makes it doubtful whether a berm formed part of the original arrangement. As a matter of fact a little consideration will show that it was impossible, and that such a normal state of things existed at first as in the case of the outer defences.

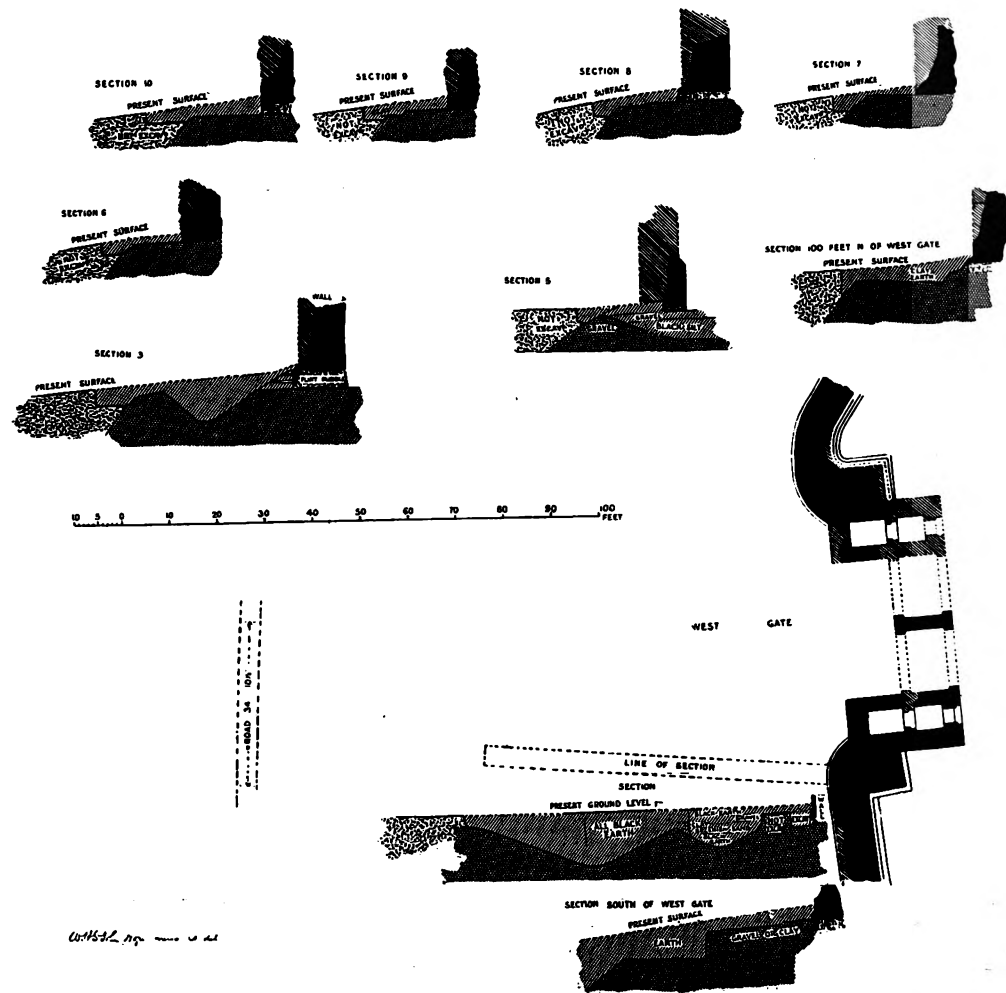


Fig. 3. Sections of the ditch outside the west wall and west gate at Calleva.

Now there are good grounds for assuming that when the Romans first made choice of this site for their town, they occupied the whole of the area then enclosed by the outer bank and its ditch, and at an early period, perhaps during the second half of the second century, they built the *forum* and the adjoining *basilica* in the middle of the town at the intersection of the roads that traversed it from east to west and north to south. The few houses of importance that were likewise built seem to have been irregularly dispersed round this centre. But this original area seems to have been deemed too large to be defended

without a very considerable force, and it was decided to confine the buildings of the growing town within an enclosure that could more easily be dealt with. A new line of defence was accordingly drawn within the older earthwork. Towards the south-east a considerable length of the latter seems to have been utilized in connexion with the new defences, but elsewhere the line ran parallel to the older work at such a distance from it as to render the outer bank useless for offensive operations.

According to the normal manner of things the new line would be, and clearly was, formed by cutting a continuous ditch of no great size and throwing up the excavated material on the inner side to form a bank. As in the case of the outer works the ditch was cut entirely in the gravel, which everywhere underlies the superficial vegetable layer.

At no great interval of time after the completion of the new inner line of defence the mound of it seems to have been cut back, and in its place was built a continuous ring of wall. This was $9\frac{1}{2}$ feet thick at the base, lessening by sets-off within to $7\frac{1}{2}$ feet towards the top, and its height could hardly have been less than 20 feet. It was composed throughout of a flint-rubble concrete, with bonding courses at intervals formed by lines of flat stones instead of the more usual bricks or tiles, and was faced outside with dressed flints with a chamfered stone plinth along the base of the wall. Behind the existing remains of this wall, which still form a nearly complete ring, there is a continuous mound or bank.

Now it has already been pointed out that the ditches of both the outer and the inner lines of defence are excavated entirely in the gravel beds, and it follows as a matter of course that the thrown-up banks should be gravel too. But in the case of the inner work the bank against the later wall, wherever cuttings have been made in it, has been found not to be of gravel at all, but of earth containing fragments of Roman pottery. It clearly therefore could not have come out of the ditch. But what then has become of the gravel that unquestionably did? The answer seems a simple one when once it is given, but it is only lately that our newly cut sections have suggested the key to the puzzle. Briefly the answer is this, that the gravel of the inner bank, owing to its sufficiently fine character, was used up while the wall was being built, in the concrete construction of which the wall is so largely composed, and thus we get a massive wall taking the place of the gravel bank.

In many places the gravel bank evidently did not furnish sufficient material for so thick and lofty a wall, and a further quantity was obtained by cutting down the scarp of the ditch which ran along the foot of the rising construction. This then is the explanation of the apparent berm, the top of which, as the sections show, is in several cases some distance below, instead of on a level with the plinth of the wall.

The cutting down of the scarp of the ditch so reduced the value of the ditch itself that it was evidently regarded as useless. It was accordingly filled up with any loose material that was handy and a new ditch cut further away from the wall. This outer ditch is accordingly the only one of which there are outward signs to-day, since its partial silting up is due to ordinary natural causes and not the result of a deposit of rubbish which effectually effaced the ditch first constructed. The material excavated from the later ditch was thrown outwards and spread over the field.

This explanation, if it be found worthy of acceptance, effectually accounts for most of the features observable in our sections, with the exception of one

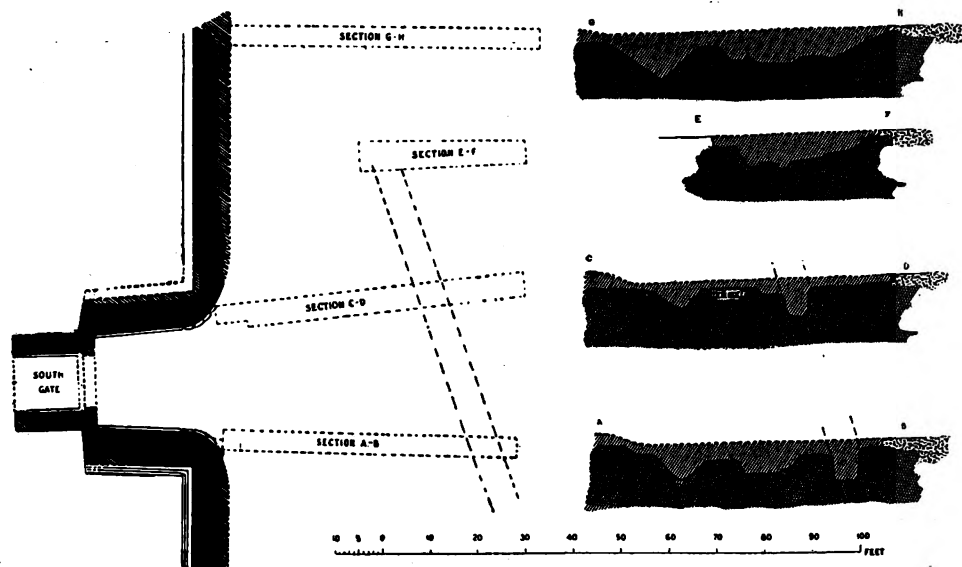


Fig. 4. Sections of the ditch outside the south gate of *Calvea*.

curious case on the west side (fig. 3), and those on the south to the east of the south gate (fig. 4). These latter show clearly enough the V-shaped ditch next the wall, but the outer ditch seems to be unfinished, as though some physical reason made its completion unnecessary. Now a very little further on towards the east we have found that the wall is built upon a foundation of piles, and for a considerable space hereabouts the ground in Roman times, as it is even to-day in wet seasons, must have been more or less boggy. It was therefore probably deemed a sufficient defence to the town without involving the cutting of the ditch, but no further sections have been cut to test or prove this. It may, however, be pointed out that the sections before the south gate have disclosed an interesting feature in connexion with such a theory, in the form of a deep ditch with vertical sides, originally protected and held up by camp-shed-

ding, running obliquely across the roadway that led up to the gate, and on the east side this ends in the incompleted outer ditch. How these ditches were bridged before the south gate nothing has come to light to show. But in the case of the north gate several curious features were revealed. This has, in the first place, on the outer margin of the confined space before the gate itself formed by the turnings in of the wall, a shallow sinking $2\frac{1}{2}$ feet wide and about 20 feet long, and only some 5 inches deep, like a chase for a thick piece of wooden planking. Beyond it there extends forward about 11 feet a gravel platform 20 feet wide with ends sloping downwards and in front of a transverse ditch some 20 feet wide, which had been filled up with earth. In the counterscarp of this ditch, about 3 feet down, was a large loose stone beneath which lay a crushed human skull. In the same counterscarp, and nearly 32 feet apart from centre to centre, were two small pits built round with flints, which were apparently the sockets for two stout vertical timbers. They were from $1\frac{1}{2}$ to $2\frac{1}{2}$ feet in diameter, and about 4 feet deep from the top of the bank north of the ditch. In the ditch itself were also the stumps of a number of posts or stakes from 18 inches to 2 feet apart. Beyond the bank was a second ditch nearly 25 feet wide, almost filled up down the middle with large flints and earth, and towards the south with white gravel. The north part had been disturbed by a modern drain.

Owing to the removal long ago of the big posts that once stood in the inner ditch it can only be suggested that they may have had something to do with a wooden drawbridge, but how this was worked, or which ditch it spanned, is a matter of speculation.

The single trench we were able to cut alongside the southern margin of the road that ran through the west gate revealed much the same section as the others on this side of the town (see fig. 3). That is to say, a filled-up ditch at the foot of the wall, and a second V-shaped ditch beyond, filled up with black earth. The filling up of the inner ditch, on the other hand, consisted of layers of earth, greenish sand, clay, and gravel, upon which was a hard surface like that of a road. This same surface was found in another cutting some 300 feet further south, and there are grounds for believing that it formed an actual roadway from the great double western gateway to the lesser single-arched gate to the south discovered in 1896.

In any case it will be admitted that the ditch about the town was a poor and mean thing, and it is likely that it was cut more with a view to its being a hindrance to a foe bent upon bringing up engines of war against the wall than as a defensive work. No doubt the townsfolk relied much upon the passive strength of the wall itself, as the Romans undoubtedly did at *Garianonum* (Burgh-by-Yarmouth), *Rutupiae* (Richborough), and *Anderida* (Pevensey).

The bank of earth that ought to have been gravel which lines the remains

of the wall has long been a puzzle, but it may perhaps be accounted for in this wise. There can be little doubt that concurrently with the building of the wall the town was laid out, by streets intersecting at right angles, into a number of rectangular spaces or *insulae*, within which rose the various buildings. These streets were of course at first covered with the original surface layer of vegetable soil, which had necessarily to be removed. Instead of being spread over the adjacent *insulae*, which seems the simplest way of disposing of it, this surface layer seems to have been carted away and thrown up as a bank against the newly built wall.

That the wall and its ditches enclose an area considerably smaller than that first occupied is proved not only by their peculiarities of construction, but by the finding in the ditches themselves of rubbish pits of similar character to those of which so many have been found within the wall. And it is quite clear from their positions that these pits without the wall were sunk before the wall and its ditches were projected. One for example was found in 1896, close to the wall, in the section then cut near the lesser west gate. Another was found last year just outside the north gate, and two others respectively north and south of the west gate. All of these pits have yielded considerable quantities of pottery, and this has a special interest since it may be regarded as unquestionably of earlier date than the wall and ditches.

But the most important evidence in this connexion is afforded by that which came to light in cutting section no. 5 outside the west wall (see fig. 3). In this case the gravel layer usually met with at the foot of the wall rested upon a layer of black matter, which increased in depth towards the wall and eventually passed beneath it. Mixed with the black matter were a certain amount of gravel, bits of red-glazed ware and other pottery, and bones, including a skull and other parts of the skeleton of a horse. In fact there seems to have been at this spot a small pond into which the dead horse had been thrown and which in course of time had got silted up and eventually built over. The effect upon the wall was disastrous: for the lower part for a thickness of $2\frac{1}{2}$ feet had settled down about 4 inches from the upper layers, over the filled-up pond. The weakening of the wall at this point may account for so much, about 5 feet, of its outer face having been removed, perhaps after a fall. Some of the red-glazed ware bears potters' stamps and other evidence by which it can be approximately dated, and thus for the first time we are confronted with material for forming some idea of the date of the wall.

But on these and other points dealing with the pottery those who have had the opportunity of examining it must now tell their tale.

W. H. ST. J. H.

The various sections cut through the city ditches yielded but little in the way of pottery or objects and in this respect proved unsatisfactory. Practically nothing was found in the V-shaped ditch and but little broken pottery in the outer or saucer-shaped ditch. Such fragments of pottery as were found were all of the usual types occurring within the walls. No coins or objects were found except at the gates and in section 2, which produced a small broken bronze bow-shaped brooch.

Sections 4 and 5 (fig. 3) on the west side of the wall disclosed the existence of a great black deposit, so were joined up and carried below the foundation of the wall. A cutting was then made in the bank on the inner side and also carried down below the foundation. This proved that the wall itself had been built over an old ditch or pond, the filling up of which was a rank black deposit extending $4\frac{1}{2}$ feet below the foundation, the total depth from the present top of the wall to the bottom of the deposit being 10 feet 2 inches. This black deposit yielded much broken pottery, various objects, and numerous bones. Amongst the objects were a bone needle or bodkin which had been broken and roughly mended by being banded with a narrow strip of lead, several bone pins, and one of bronze, pieces of lead and bronze, metal slag, and half a wooden writing tablet. The bones included dog, pig, and horse; of the latter a fine skull and other bones were extracted from under the wall itself. The pottery included forty-five pieces of red-glazed ware, mostly plain, two bearing the stamps CRACIS. M and LVPPA, several rims of saucers with the so-called ivy-leaf pattern, one with a rivet, and four figured fragments. The other pieces consist of rims, etc. of a hard blue-grey ware, probably local, others of a reddish paste, fragments of *amphorae*, common black ware, and much coarse black ware in the paste of which is incorporated calcined flint, one rim of a large vessel showing rope markings. Similar fragments of pottery were found in the mound itself, and again in section 11 on the north wall, but with the addition of several pieces of the so-called Castor ware and one piece of New Forest ware. A *denarius* of Septimius Severus was found in section 11 on the inside of the wall in the mound and close to the wall at a depth of 6 feet from the top of the mound.

The cuttings in front of the north gate (fig. 2) produced but little pottery, a few coins of late date, Constantine period, and a human skull crushed out of shape by the weight of a large flat stone, apparently a bonding stone from the wall, which lay on the top of it. Just to the east of the gate and close to the wall was found a pit, 20 feet in depth, with a puddled or plastered bottom. This pit was circular, with a diameter of 5 feet at the top gradually diminishing to 3 feet at the bottom. It was cut through the gravel for 11 feet 10 inches and through clay for 8 feet 2 inches. Much broken pottery was found all through, and at

9 feet from the surface two whole pots and a portion of a twisted glass rod about an inch and a half in length.

The sections on either side of the west gate showed the ditches to be continuous, but the approach to the gate could not be examined owing to the modern roadway. Pits were here found cut in the inner or V-ditch, one on the south and one on the north side of the gate. The one on the south side was cut on the inner slope of the V-ditch at 5 feet 6 inches from the ground level; it had a diameter of 4 feet and was about 4 feet in depth, but only began to show when the side of the ditch was reached. It was filled with rough broken pottery, mostly of the coarse black ware with calcined flint in the paste. A large iron brooch was also found here. The pit on the north side, which was 8 feet west from the rounded angle of the wall, was also cut in the slope of the V-ditch, and was 3 feet 6 inches in diameter, with a depth of 9 feet. It proved much richer in objects and pottery, and yielded two whole pots, three bronze brooches, a bronze surgical (?) instrument, a bronze handle, four broken bone pins, a piece of lead, a fragment of millefiore glass, two saggars, one much vitrified, and a white marble object shaped like a brick. Much broken red-glazed ware was also found, including a good many riveted pieces and the following potters' names, CARILLI. O, SECVNDVS, IVSTI. M, OF. CRESTI, also a large piece of an early figured bowl (shape 29) of Lezoux ware, a cup of late first or early second century, a dish with round moulding inside, late first century, and figured ware of early second-century date.¹ A small fragment of marbled red-glazed ware was also found here. The coins found in the trenches at the west gate were again all of late date, the earliest being one of Carausius, the rest of the Constantine and later period. The trenches at the south gate produced the usual amount of pottery, but none of special interest. A silver coin of Trajan, a second brass of Antoninus Pius, about two dozen coins of the Constantine and later period, mostly in very bad condition, and a round bronze enamelled brooch were found in the various sections.

The cuttings through the great outer earthwork in Rampiers Copse were equally unsatisfactory as regards objects. The first cutting produced practically nothing except a few fragments of pottery, all of which may be regarded as surface pieces, as the mound is riddled with badger and rabbit holes. The second cutting was also unproductive, but on its northern face nearly at the base was found a hole ringed with flints, the floor covered with burnt ash, and filled with broken pottery, no two pieces of which would join together. The pottery was examined by Mr. Reginald Smith, who was of the opinion that it showed British influence from the cordons and profiles, and was probably of the first century, except one red base, which may be imitation Gaulish (?) of the third century. On

¹ From information kindly given by Reginald A. Smith, Esq., F.S.A.

the southern face of the mound were indications of a cremation, a platform having been cut in the side of the mound for the reception of the body. On this platform was a layer of wood ashes in which were calcined bones and numerous fragments of bronze burnt out of all shape. The sides of the mound were cut down in the hope of finding an urn, but without any result. The ditch outside the mound, although carried down to a depth of 11 feet, yielded nothing but a few fragments of coarse sandy pottery, very decayed and rotten.

The three sections through the outer earthwork on the north-west side of the city were unproductive; a few fragments of pottery were found on the edges and a few in the ditch, but none call for special remark.

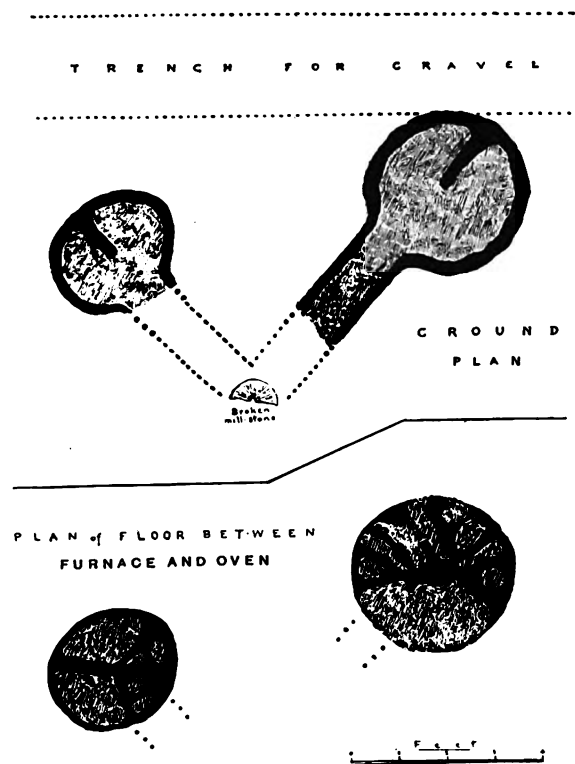


Fig. 5. Plans of potters' kilns found to the north-east of *Calleva*.

In conclusion it may be added that the wet season of 1909 rendered the work of excavation in the ditches and mounds very difficult; as fast as they were dug out they filled with water, which gradually undermined the sides and caused a collapse.

In November, 1906, the tenant of a field on the north-east side of the city, being in want of some gravel, dug a hole in his field, and during the work struck the edge of a hard substance. On hearing of this, Mr. J. Challenor Smith and I offered to have the gravel dug for him, the result being the discovery of two potters' kilns (figs. 5 & 6). Mr. Clement Reid had already warned us that potteries

would be found in this direction, if in any, owing to the presence of suitable clay. The kilns, which were about 2 feet below the present surface level, are of very rough workmanship but of the usual construction, being sunk in the gravel with the walls, etc. made of clay. In the clay can still be seen the impress of the grass and ling which were used to bind it together.

Kiln no. 1 was roughly circular in shape, with an outside diameter of 3 feet 6 inches, and an internal one of 2 feet 8 inches, the thickness of the outside walls being 5 inches. It consisted of a floor, a flue for heating, and a diaphragm or table supported on a pedestal and pierced with some nine or more holes of irregular shape. When first exposed a portion of the side of the dome remained *in*

Kiln no. 2.

Kiln no. 1.



Fig. 6. Potters' kilns found to the north-east of Calleva.

situ, but it gradually crumbled away. The dome was composed of a mixture of clay and broken pottery, faced outside and strengthened by the addition of broken pot lids, evidently wasters kept for this purpose. The floor of the kiln gradually dropped towards the mouth of the flue, the height of the aperture through the wall to the flue passage being 15 inches, only 1 inch below the table. The flue extended outwards for about 2 feet 6 inches, the width of the passage being 11 inches, and the thickness of its walls about 2 inches. It had been domed throughout, but only a very small portion remained intact. The passage was covered with black wood ash, and traces of similar ash extended some feet beyond. The table was 16 inches above the floor level, and was of an average thickness of about 6 inches. It was supported on a pedestal which

faced the entrance to the flue, thus allowing the free use of the ash-rake. The table itself was pierced with nine or more holes, but was very irregular and much broken in places. The holes varied considerably in size, being from 4 to 12 inches in length, and from 3 to $5\frac{1}{2}$ in width. The total height of the kiln was about 3 feet 4 inches.

Kiln no. 2, which was nearly at right angles to no. 1, was more of an oval shape, being 2 feet 10 inches in length by 2 feet 2 inches in width. In construction it resembled no. 1, but was much more broken and damaged. The height from the floor to the table was 20 inches, the inside width of the flue 10 inches, and the thickness of the flue walls about $2\frac{1}{2}$ inches. The thickness of the outside walls and of the table corresponded with those of no. 1.

A considerable quantity of broken pottery was found in and around the kilns, but much was surface stuff such as is found anywhere on the fields within a radius of a quarter of a mile from the walls. In kiln no. 1 were found four wasters of a hard blue-grey pottery, as well as the greater portions of two dishes, sundry pieces of basins, and many fragments of broken pot lids similar to those used to strengthen the dome, all of which were of a sandy texture. The blue-grey pottery is such as may be made anywhere where suitable clay exists, but the sandy texture ware appears to be peculiar to Silchester. Not much of this pottery has been found on the site, probably owing to its friable nature, but perfect specimens of the dishes and bowls are in the Silchester collection in Reading Museum.

Kiln no. 2 produced only one perfect vase and one dish, both found in the furnace flue. The dish is of a coarse red ware, much resembling the stand for a modern flower-pot. The vase is of a yellowish-brown paste, and is slightly ornamented on the upper portion.

The only other objects found were a bronze bow-shaped brooch and half a millstone.

Thanks are due to Mr. J. Challenor Smith, not only for his assistance in the excavation, but also for an excellent series of photographs illustrating the progress of the work.

M. S.

Note on Discoveries in the outer Entrenchment. By J. B. P. KARSLAKE, Esq.,
M.A., F.S.A.

The outer entrenchment was made use of as a burial ground, probably by the native British inhabitants of the poorer class. In that portion of the entrenchment situate in Rampiers Copse, burials seem almost continuous on the inner slope of the mound, and, as this year's section shows, they also occur on the outer face.

Those excavated are usually similar in character, although, owing to the disturbance of the soil by badgers and rabbits and those who have for many generations endeavoured to dig these latter out, in most cases they have not been preserved in any way intact.

The following is a description of a burial excavated in 1900, and may be taken as typical of the rest:

The original surface-indication consisted of a group of flints, a small heap of six or seven, and among them a portion of a square glass bottle. At some 3 feet 4 inches below was a cinerary urn of grey ware and distinctly Roman type, obviously a waster from its irregular shape. The urn stood upright, and as found was without cover. It was partly filled with sand and incinerated bones.

From 6 inches to 1 foot below the urn, and extending for a distance of 6 feet 4 inches south of the urn and over a space 4 feet 6 inches wide, were scattered large nails; some fused out of shape, others with portions of wood still adhering to them, the surrounding earth being burnt and discoloured and containing much charcoal.

At a point 6 feet 4 inches south of the urn and 11 to 16 inches below its level a number of hobnails, some single, some in "threes", were found in a patch about 6 inches square.

Among the burnt earth were the charred teeth of ox and remains of a jaw-bone and a few fragments of coarse black ware.

From the surroundings of this burial it was clear that the method of burial had been as follows. The lower end of the bank had been dug away until a face about 4 feet 6 inches was left. Against this perpendicular face a fire of logs was made, and on this the corpse extended on a wooden bier and clothed was laid. When combustion was completed the fragments of bone were collected and placed in the urn in the position occupied by the head of the corpse and the earth thrown back until the original slope of the mound was restored and all trace of fire and charcoal buried beneath it.

Another feature in connexion with the outer entrenchment may be mentioned. When cutting a section through the mound and ditch some time since, a strong spring of water was encountered at the foot of the mound. This had no doubt caused some trouble to the original builders, as it necessitated some form of retaining wall. This was constructed in the escarp of the ditch of two lines of wicker hurdling 12 inches apart, the wicker-work being supported at intervals of about a yard by stout stakes of split oak and alder, the space between the wattling being rammed tight with clay puddle.

The wattling was composed of uprights of willows about 1 inch thick and 4 inches apart, and longitudinally similar sticks were twisted at 4 inch intervals. And into this framework thin osiers, many with the leaves and twigs remaining, were entwined.

Besides this retaining wall a sort of tank, 8 feet long and about as broad, was formed to retain the water of the spring by a similar construction of clay and wattle. This had at an early period been thrown down by a fall of soil from the bank above, and on the wicker-work was embedded a fragment of red-glazed ware, which goes to show that the decay of the structure took place in Roman times.

The western entrance to the outer work was at the site of the field gate to the north end of Rampiers. It was protected by a crescent-shaped outwork. The original roadway passed round this outwork and ascended by a fairly steep slope over the inner embankment.

This road was 10 feet broad, formed of a mixture of red gravel-stones and clay. It was later buried under the Roman road which led from the south-west gate. This road is 30 feet broad, and to accommodate it the inner and outer earthwork had been levelled down to form an even grade by which the road descended to the lower ground, showing clearly that at the date of the construction of the Roman road no importance was attached to the outer entrenchment as a defensive work.

The space between the outer entrenchment and the wall was occupied, certainly during the latter period of the existence of the city, by native habitations unequally placed and approached by gravel paths.

The usual type of hut seems to have been round, about 14 feet in diameter, with a central hearth of flints or large tiles. Round or in front of the fire a basin-shaped hole was dug, about 2 feet deep and 3 feet 4 inches in diameter, and lined with clay; this was no doubt used to contain the hot ashes and acted as a sort of oven. The houses were constructed of clay and wattling, but except for some post-holes and a line of loose flints nothing now remains.

There were, besides the round huts, rectangular houses, but little trace is left to form any detail plan of the size. In the case of these houses an angle or

corner seems to have been occupied by the fire, the house being built up at this point with flints, no doubt to prevent a conflagration, and in one case distinct traces of a clay and wicker chimney or flue about 3 feet 4 inches in diameter were found among the débris of the hearth.

In conclusion it only remains to point out that the Silchester Excavation Fund, having done its work, is now closed, and will shortly be wound up. Had the opportunity been afforded it the Executive Committee was anxious to include in its investigations the so-called amphitheatre on the north-east, with the possible remains of a *nymphaeum* close by, and to examine generally the ground between the inner and outer defences to the north of the town, but the necessary permission to do this could not be obtained from the owner of the land, Mr. J. H. Benyon. By way of contrast to this, our only refusal, may be mentioned once more the unhampered facilities so freely and courteously accorded by both the late Duke of Wellington, and his successor the present Duke, who fortunately owned the whole of the area we have been able to excavate. We have also to express our cordial thanks to Mr. Edward Cooper and Mr. Thomas Lush, successive tenants of the land, for the kind way in which they all along have met our wishes. For leave to excavate last year in the ground beyond the Duke's property on the west and south-west we desire to express our indebtedness to Mrs. Thorold.

XIV.—*The Discovery of Prehistoric Pits at Peterborough*, by G. WYMAN ABBOTT, Esq.; and *the Development of Neolithic Pottery*, by REGINALD A. SMITH, Esq., B.A., F.S.A.

Read 30th June, 1910.

I. *Prehistoric Pits at Peterborough.*

THE series of relics exhibited to the Society come from an early settlement at Peterborough, dating from a time when flint was in general use, perhaps before the introduction of metal, at least among the poorer inhabitants of the country. The site is a promontory rising out of the Fens and lying on the north-east side of the town. The river Nene joined the Fens about half a mile to the south-west of the site, which is only a few feet above sea-level, and was almost surrounded in times of flood. So far as can be determined at present, the extent of the settlement is several acres, but the ground has not yet been moved except on the west side, where unfortunately no observations were taken. There were no surface indications of human habitation, and no burrows noticed on the promontory or in its neighbourhood. The subsoil is gravel, fine and coarse, varying in depth from 8 to 10 feet. The top 18 inches of gravel, underlying the soil, is reddish brown, mixed with a reddish loam, which sometimes occupies natural pockets 3 to 8 feet deep, cutting down through the gravel and at times reaching the cornbrash below.

The discoveries have not been systematically made, but occurred during excavations for sand and gravel; hence many relics have been destroyed or lost by the workmen, who considered potsherds of no interest or value. During my enforced absence from the site many pits have no doubt been obliterated, and no record made of their position, character, or contents.

The settlement consisted of many pits sunk in the reddish loamy gravel and in the underlying gravel stratum, the depth ranging from 2 to 6 feet and the diameter from 3 to 14 feet. The shapes are irregular, but the majority are practically circular, the smaller pits having steep sides and flat bottoms, and the larger being fairly shallow and flat-bottomed or else deep and V-shaped (fig. 1). The average example would be a circular excavation about 10 or 12 feet in diameter at the top, $3\frac{1}{2}$ to 4 feet deep, and saucer-shaped

like the ordinary hut-circle, such as those on Hayes Common described by Mr. Clinch.¹ In two cases I observed that the saucer-shaped depression was in close proximity to a V-shaped pit some 6 feet deep: they were within 5 feet of one another, but otherwise not visibly connected in any way. If contemporary, the larger may have been a dwelling and the other a store-pit. When found together the former usually contains a dark layer of ashes about 4 inches from the bottom, and from 2 to 4 inches thick: this deposit and a quantity of burnt stones found near it indicating the site of a hearth.

The other common type of pit is steep-sided and flat-bottomed, $4\frac{1}{2}$ feet in diameter and $2\frac{1}{2}$ to $3\frac{1}{2}$ feet deep. All the pits found contained remains of charred wood, and many had burnt pot-boilers, flint flakes, and scraps of animal bones; but nothing of more definite character has been found in the majority, though the form is exactly the same as those that produced the potsherds, and the dark soil is common to both.

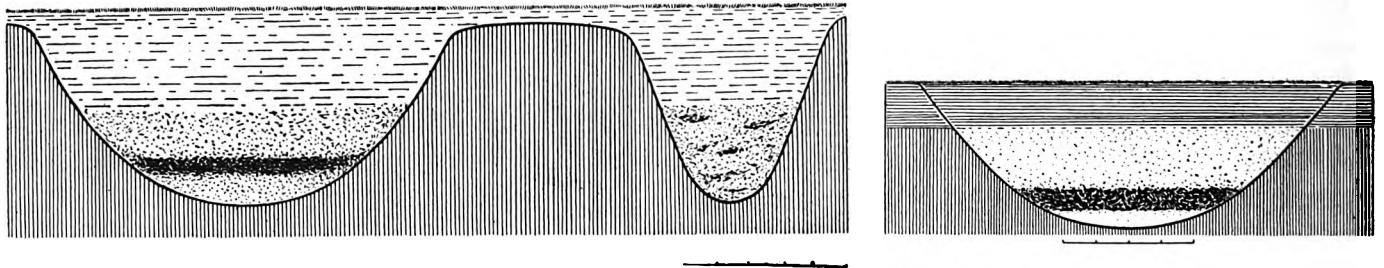


Fig. 1. Diagrammatic sections of pits, and pit no. 1, Peterborough.

The most interesting pit (no. 1) lay at the south-west limit of the settlement, on the edge of the plateau. It seemed to be circular with a diameter of about 12 feet, the depth in the centre being 4 feet. The sides sloped gradually inwards and were of the usual saucer-section. Part of the pit had been destroyed before its nature became apparent, and valuable evidence was no doubt lost, but it was seen to be filled with blackish earth down to 8 inches from the bottom, where it gave place to a greyish black layer that seemed to be composed of decayed animal or vegetable matter. The line of division was not very definite or regular. Below the grey stratum was a hard gravel floor resting on but distinct from the undisturbed gravel. Throughout the black and grey filling were scattered small pieces of charred wood and ashes, also pottery fragments, though these were chiefly found at the base of the black layer and in the greyish matter below. All the fragments had evidently been thrown in that condition into the pit, or been thoroughly broken and mixed up before the pit

¹ *Journal of Anthropological Institute*, n. s. ii. (1899), 124.

was filled in. Scattered throughout the pit were also many flints, which may be classified as follows :

- | | |
|---------------------------------------------------------------|--------------------------|
| 1 small barbed arrow-head | |
| 3 roughly made saws | |
| 10 small knives | } (pl. XXXVIII, fig. 1). |
| 35 scrapers, $\frac{1}{2}$ inch to $1\frac{1}{2}$ inches long | |
| 20 cores, possibly slingstones | |
| 300 or more unworked flints. | |

Several pieces, both worked and unworked, bore traces of contact with fire. They were all made from nodules obtained in the local gravels, and are mainly greyish or black. There is a marked absence of patination, all being dull as if recently chipped, in contrast to those found on the surface in this locality.

The only bone implement found was a pin 4 inches long, made from the bone of a pig. There was also a single clay slingstone¹ of rough material baked red, $1\frac{1}{4}$ inches long and $\frac{3}{4}$ inch in diameter (fig. 2). Pot-boilers to the number of 300 were found, the majority being imperfect owing to the action of heat. Most were of quartzite or sandstone pebbles from the gravel, and varied in size from 2 to 4 inches. Several lumps of baked clay, mixed with quartz or flint grit, may have been prepared for pot-making, or possibly formed part of the wattle-and-daub walls hardened by fire. In the black soil were also several small lumps of soft greenish buttery clay, containing no extraneous matter. Both in the grey and black filling were scattered bones of birds and horse, red deer, pig, and many smaller animals, the larger being all split for the extraction of marrow. Many were charred or burnt, and several had been gnawed by animals. Nutshells also occurred in the grey layer at the bottom of this pit.



Fig. 2.
Clay sling-bolt,
Peterborough. $\frac{1}{4}$.

Most of the potsherds belonged to the so-called drinking-cup or beaker class, but the vessels varied considerably in size, and some attained extraordinary dimensions, the largest that can be theoretically restored being over 9 inches wide at the mouth, and about 11 inches in height. These fragments are, as usual in this type of ware, highly ornamented, the designs consisting of squares, bands, lozenges, and triangles of incised and dotted lines, the paste being coarse and gritty or fine and hard, but always comparatively thin.

Several small fragments of neolithic pottery were found, but exclusively in

¹ These seem generally to date from the Early Iron Age, and many were found at Glastonbury. Examples are also known from Wilts. (*Wilts. Arch. Mag.* xxvii. 287); Highfield, Salisbury, and Hod Hill, Dorset; also Mt. Caburn, Lewes (*Archaeologia*, xlii. 467, pl. xxv. fig. 47); and an angular pattern has been found at Womersley, Surrey (*Surrey Arch. Collns.* xxii. 199).

the greyish soil at the bottom of the pit no. 1. The paste is usually rough, hard, and gritty, mixed with ground flint, which shows up against the black or dark brown body. The fragments belonged to a round-bottomed bowl ornamented on the upper part, like one found in the Thames at Mortlake, and now exhibited in the British Museum. Similar fragments were found in a long barrow at West Kennet, Wilts., and are in the same collection, and I myself found a vessel of the same character about 100 yards from the site of the pit-dwelling just described.

There were also two fragments of brownish yellow ware, the paste fairly soft, which belonged to the rim and side of a second round-bottomed neolithic pot. The ornamentation consisted of a double herring-bone line, and extended also along the top edge.

Several fragments of a hard black paste were ornamented with lines of impressions of the finger-tip, and were peculiar in having the lip turned inwards (fig. 9), the ornamentation also extending to the rim.¹

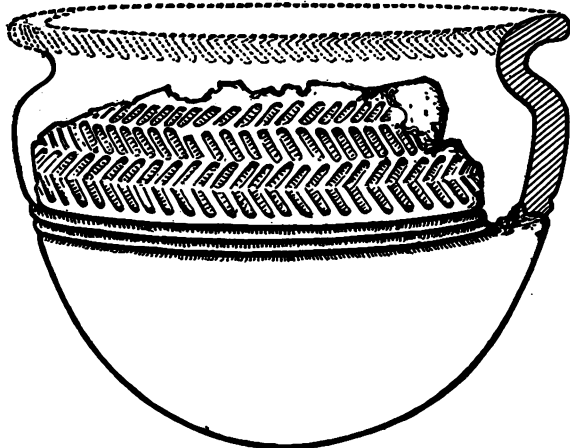


Fig. 3. Neolithic bowl, Peterborough. $\frac{1}{2}$.

The round-bottomed neolithic bowl exhibited (fig. 3) has been already mentioned as found in the vicinity. It lay in the black filling of one of the larger excavations before described. Nothing was noticed in actual association with it, but flint flakes and scraps of pottery (including a piece of a thumb-marked drinking-cup) were found just below the top soil in close proximity to this pit. The vessel is of hard gritty ware with large pieces of flint incorporated. It is $\frac{1}{2}$ inch thick in places, and of a brownish black colour. The rim is lost, and the decoration consists of a double line of herring-bone pattern impressed in the clay before baking by means of a notched stick or bone, in the characteristic neolithic manner. It closely resembles in shape the Mortlake specimen (pl. XXXVII, fig. 3); and in colour, material, and ornamentation another vessel found in the Thames at Putney and now in the Edinburgh Museum.

So far as can be ascertained from fragments found in pit no. 1, the beakers varied in size considerably; the largest being about 11 inches high, about 9 inches wide at the mouth and practically the same across the shoulder, and the smallest (pl. XXXVII, fig. 1) about one-third these dimensions. The larger vessels of this type were usually of coarser paste, ornamented in what seems to be the earlier

¹ This type is mentioned by Lt.-Gen. Pitt-Rivers in his *Excavations in Cranborne Chase*, iv. 163, and by Mr. J. R. Mortimer in his *Forty Years' Researches in Yorkshire*, 103.

style, viz. finger-nail and punch markings, though the finest beaker style is also represented, consisting of zones of oblongs, triangles, and lozenges of incised and dotted lines. On some fragments, as again at West Kennet (fig. 7), both styles occur together, the herring-bone pattern and punch-marks being thus shown to have been used by the same potter. A semi-circular punch-mark, produced by impressing a half-cylinder of bird's bone or reed, is found on one of the Peterborough pieces (fig. 4, D), and seems to be of the rarest occurrence elsewhere. The oldest design appears to be the herring-bone, made with a small notched piece of wood or bone, the notches being small and fine, but the impressions somewhat roughly made: this pattern is characteristic of the round-bottomed bowls.

The next pattern in point of time seems to have been made with the finger-nail or a punch, and consists of rows of impressions with intervening plain zones, or covering the entire surface (pl. XXXVII, and fig. 8). Though found occasionally on the neolithic bowl, this seems to belong more properly to the earliest beakers of the transition period.

The last series of designs occurs on the fully developed and highly ornamented beakers which have been specially studied by the Hon. John Abercromby (see *post*); and no patterns that could be assigned to a subsequent period occurred in the Peterborough pits.

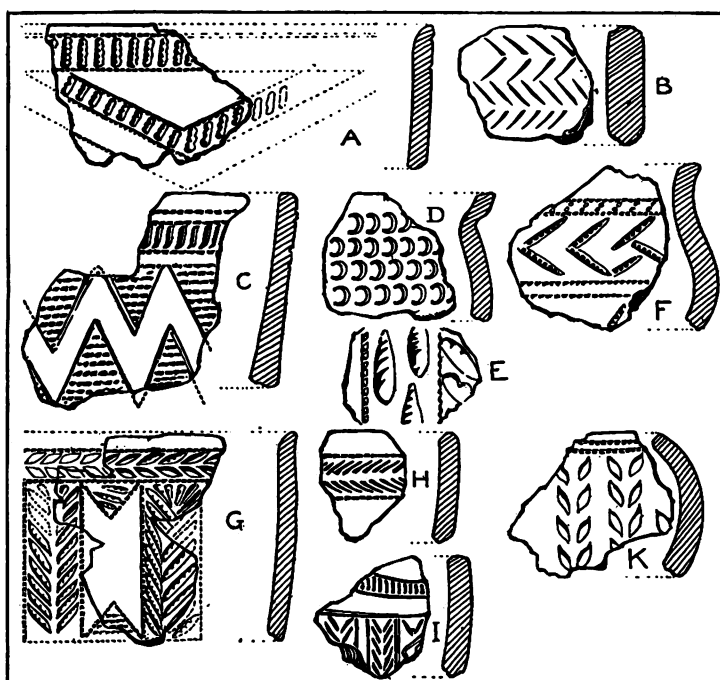


Fig. 4. Patterns on drinking-cups, Peterborough. $\frac{1}{2}$.

From these potsherds the date of the settlement can be fixed at the end of the neolithic period, when the first invasion of which we have any tangible evidence was taking place. The new-comers introduced the beaker or drinking-cup, and landing on our eastern shores, conquered and drove inland the aboriginal dolichocephalic population. Possibly some of the roughest beakers (fig. 8), which retain neolithic designs such as the finger-nail patterns, were produced by some who remained on the east coast as the slaves of the conquerors; and this is all the more likely if, as is likely, pot-making was woman's work.

The position of the Peterborough pits on the first high ground overlooking the Wash is quite in keeping with this theory; and the type of beaker is quite



Fig. 5. Fragments of drinking-cups, with sections, Peterborough. $\frac{1}{2}$.

as early as any found elsewhere in Britain. Other specimens of the same early type have been discovered on islands in the Fens, one from Ramsey, for instance, being in the Peterborough Museum. One of the chief results of an examination of the Peterborough pits is undoubtedly the proof afforded that the drinking-cup was not exclusively for funeral purposes, but was also intended for domestic use even when highly ornamented and carefully finished. Further, the distribution of the sherds in the pits showed that the latter were merely kitchen-middens, and the vessels were broken and scattered before they came into the pits in the first instance.

Two excavations of the smaller kind were found about 100 yards north of pit no. 1, about 3 feet apart and containing fragments of three drinking-cups embedded in the black filling. They were all highly ornamented in the usual style and of a fine though somewhat soft red paste; but nearly all were destroyed by exposure for some months to the weather.

To the north-east of these pits a complete cinerary urn was found upright 2 feet below the surface in a small hole. The contents consisted, so far as I can ascertain, of the black loamy soil that filled the excavation. The urn is of the usual type, 7 inches high and $4\frac{1}{2}$ inches across the mouth, of red paste, well baked and ornamented on the lip with cord pattern. No cremated bones were found in it nor elsewhere on the site, so far as my information goes; and there was no outward and visible sign of a burial.

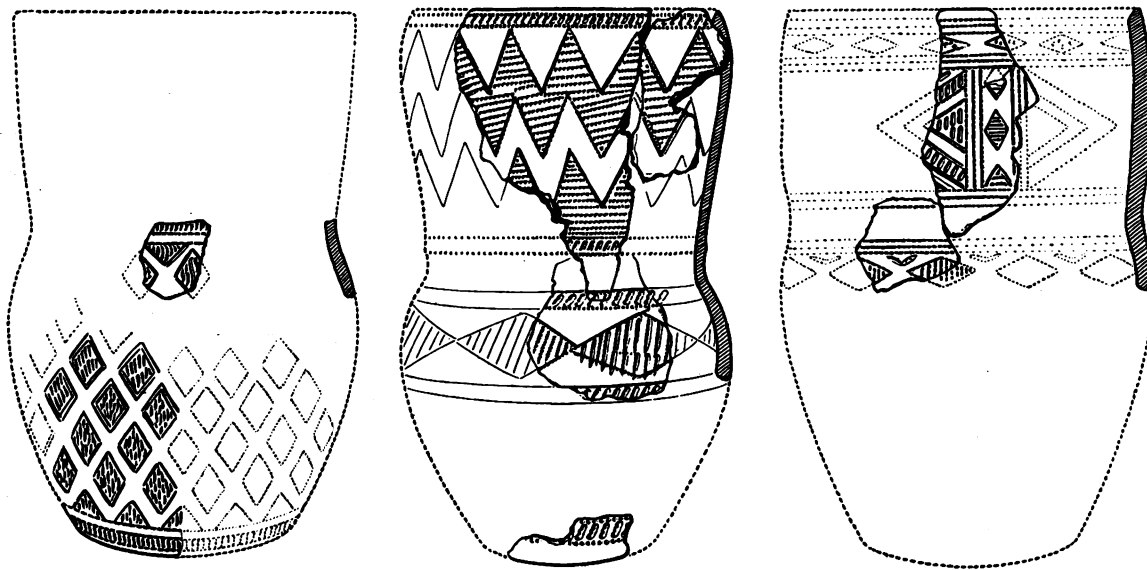


Fig. 6. Fragments of drinking-cups, with sections, Peterborough. 1.

II. *The Development of Neolithic Pottery.*

THE outstanding feature of Mr. Abbott's discoveries at Peterborough is the occurrence in close association of two classes of pottery that can be clearly distinguished. The rounded base has long been regarded as a leading characteristic of neolithic pottery in Scotland, and the exploration of cairns in Arran by Dr. Thos. Bryce¹ leaves little doubt on the subject. But perhaps the closest parallel in that area to the particular form under discussion was found in the north chamber of a cairn at Achnacree, Argyleshire,² without any other indications of a burial. In the south chamber was found a somewhat similar bowl, with cylindrical body and rounded base, recalling the profile of an Irish specimen in the British Museum (pl. XXXIX, fig. 1). An attempt will be made in what follows to show that this similarity is not accidental; and it is the Peterborough find, in conjunction with certain isolated discoveries, that suggests an origin for the large class of Bronze Age sepulchral pottery known as "food-vessels".

There has recently been added to the national collection a thick and heavy bowl of blackish pottery that was found in the bed of the Thames at Mortlake (pl. XXXVII, fig. 3), below a thin calcareous layer that seems to have sealed up some early deposits of flint and human bones as well as pottery. The height is 5.1 in. and the body is practically a hemisphere 6.9 in. across, with walls 0.3 in. thick, surmounted by a deep hollow moulding and a spreading lip; ornamented on the top and outer face of the rim with transverse incised lines, and below the shoulder with a band of herring-bone pattern, the impressions being made in the clay before firing with a twisted cord or thong, and the transverse markings being sometimes very fine and closely set (fig. 3). The lower part of the bowl is left plain, but this was not invariably the case in vessels of this character. A fragment found in association is of gritty paste with a fine black surface and grey core. The maximum diameter would be 10 in., and the height (if in the same proportion) 7.4 in., the body being 0.4 in. thick at the shoulder. There is cord pattern in parallel lines outside the lip and within to a depth of 1 in., also on the shoulder, below which are two rows of finger-nail pattern between double rows of corded chevrons.

It is important to add that on the same site and beneath the same calcareous seam was found a large and practically complete specimen, 9.6 in. high, of a well-known drinking-cup type (pl. XXXVII, fig. 2), called α by Mr. Abercromby,

¹ *Proc. Soc. Ant. Scot.*, xxxvi. 135, with figs.; see also *Journal of Anthropological Institute*, 1902, new ser. v. 398.

² *Proc. Soc. Ant. Scot.*, ix. 414, pl. xxiv. fig. 2 (7 x 4 in.). The other type (fig. 1) resembles one from Bute figured in vol. xxxviii. 48, fig. 20 (diam. 5 in.). Cf. Anderson, *Scotland in Pagan Times: Bronze and Stone Ages*, 271.



Fig. 1. Drinking-cup, Peterborough. $\frac{2}{3}$



Fig. 2. Drinking-cup, from Thames at Mortlake. $\frac{1}{3}$

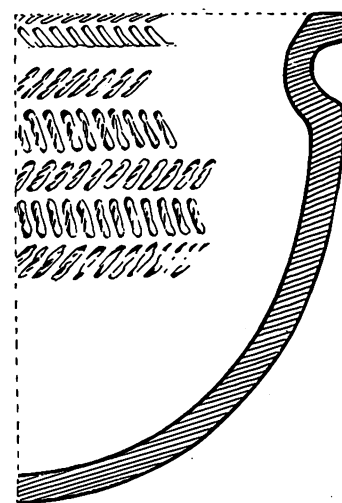


Fig. 3. Neolithic bowl with section and details, from Thames at Mortlake. $\frac{1}{2}$

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and another of his type β , 5.3 in. high, covered with horizontal cord-markings. The association is rendered practically certain and all the more important by the discovery of type α and neolithic ware in considerable quantity in the Peterborough pits. Though on both sites there may have been some interval of time between the two classes of ware, it is now clear that they were made and used by dwellers on the same spot, living apparently under the same conditions; and an explanation of the presence of two distinct but practically contemporaneous types in the same area now seems to be possible. It is first, however, necessary to bring together examples of the thick and coarse blackish ware that can be safely classed with the Mortlake bowl and the lower finds in the pits at Peterborough.

The accompanying illustrations of two perfect specimens brought up in a net from the Thames at Mongewell, near Wallingford (pl. XXXVIII, figs. 2, 3), are from photographs kindly supplied by Mr. G. W. Smith, who has the originals in his collection and states that one is $4\frac{3}{4}$ in. high and 6 in. in diameter, the other $3\frac{1}{2}$ in. high and 5 in. in diameter. Four specimens therefore, at least, are known from the Thames; and there is sufficient evidence to prove that the type is not confined to the South of England.

Our Fellow Mr. John Ward found in Rains Cave, Longcliffe, Derbyshire,¹ enough of a round-bottomed bowl to determine its original appearance and dimensions, and gives the following description: "Diameter about $8\frac{1}{2}$ in.; paste coarse and reddish, hand-made, variable in thickness, but generally thicker at the bottom than elsewhere. From the obvious discoloration of the lower parts externally and traces of smoke, we may safely conclude that it was used as a stew-pot. The shape is admirably adapted for this purpose. When placed in the embers of a fire its rounded shape would prevent fracture, and in this respect it is an anticipation of the flasks and dishes of the chemists. The paste of these hand-made vessels was mixed with crushed calc-spar, which is common in the district and scarce elsewhere; from which we may infer that they were made in the locality." The illustration shows the rim alone ornamented, and on the same plate, fig. 4, is a fragment of a vessel with parallel cord pattern, the paste being thick and blackish. As an indication of date it may be mentioned that wheel-made pottery and iron were found in this cave, but no bronze, which is all in favour of the rougher pottery being neolithic.

An interesting find very much to the point is due to Mr. J. R. Mortimer,² who for nearly half a century has been excavating in the East Riding of Yorkshire. Under one end of a true long barrow at Hanging Grimston was found

¹ *Journal of Derbyshire Arch. and Nat. Hist. Soc.*, xi. (1889), 39, pl. ii. fig. 3. The height would be about 6 in.

² *Forty Years' Researches*, 103, pl. xxxi. fig. 248.

a subterranean dwelling that had evidently been destroyed by fire; also four shallow round-bottomed vessels of plain ware with diameters of 12 to 13 in. and depths varying from $3\frac{3}{4}$ to 6 in. The shapes are not identical with the type under discussion; but the discovery of four domestic specimens, evidently earlier than a long barrow that was not wholly explored but probably contained burials, is certainly instructive. In the same Riding, Dr. Greenwell¹ has found round-bottomed bowls very similar to those from Scotland, but not decorated and of palish brown clay, anything but heavy. He also mentions the occurrence of dark-coloured plain pottery, presumably the remains of domestic vessels, as common in the Wold barrows. These are, however, so fragmentary that no reconstruction has been possible, though from the curvature Dr. Greenwell concludes that many of the vessels were round-bottomed.

A curious pottery vessel referable to the same period was found by Bateman in an interesting barrow opened in 1843 near the village of Biggin, Derbyshire. The find has since been published in another connexion by Hon. John Abercromby,² but the original illustration³ gives a better idea of the vessel than the recent photograph. It was found on a small heap of neolithic flint implements in association with a human skeleton, the knees drawn up and the skull having an index of 74.3 (dolichocephalic). The cylindrical neck broadens out below to a projecting fillet, beneath which is a hollow moulding and a hemispherical body. The ornamentation consists of bands of short incised lines and herring-bone pattern, the whole being 4 in. high and $2\frac{1}{2}$ in. in diameter at the widest part. Bateman commented on its novel and unprecedented shape, and drew particular attention to the absence of metal here in any form.

The late Gen. Pitt-Rivers had a shrewd suspicion that much of his no. 1 quality British pottery was neolithic. Wor barrow, which he definitely assigned to the long-barrow period, produced a number of long skulls, and some pottery fragments⁴ that evidently belonged to round-bottomed bowls exactly corresponding to that from Mortlake (pl. XXXVII, fig. 3). More came from barrows at Handley in the same neighbourhood, and his comments on the ware should be read in this connexion.

The most significant find of this class of pottery in England was published by this Society in 1860, with copious illustrations.⁵ Under the auspices of the Wiltshire Archaeological and Natural History Society, Dr. Thurnam opened a chambered

¹ *British Barrows*, 143, fig. 91 on p. 107.

² *Man*, 1906, no. 44, fig. 5.

³ Thomas Bateman, *Vestiges of the Antiquities of Derbyshire*, 43. Most of the find is now in the Sheffield Museum.

⁴ *Excavations in Cranborne Chase*, iv. 67, pl. 261, fig. 17; see also fig. 10, and pl. 246, figs. 2-7; pl. 298, fig. 8; pl. 304, fig. 7; remarks on p. 163.

⁵ *Archaeologia*, xxxviii. 405.

long barrow at West Kennet, near Avebury, and found skeletons with elongated skulls, flint implements, and three heaps of pottery, specimens of which are now in the British Museum, and include four rim fragments of different vessels with the characteristic hollow moulding below the lip, of thick ware ornamented in the usual way with the finger-nail, impressed cord, pointed stick, etc. (fig. 7). Two fragments figured by Thurnam¹ are quite distinct from the rest, of black and brown colour, and obviously of later dates. One is part of a black pottery dish with several round holes in a flat base, the original dimensions being $5\frac{1}{2}$ in. diameter at the mouth, and 4 in. at the base, the wall being 2 in. high. A com-

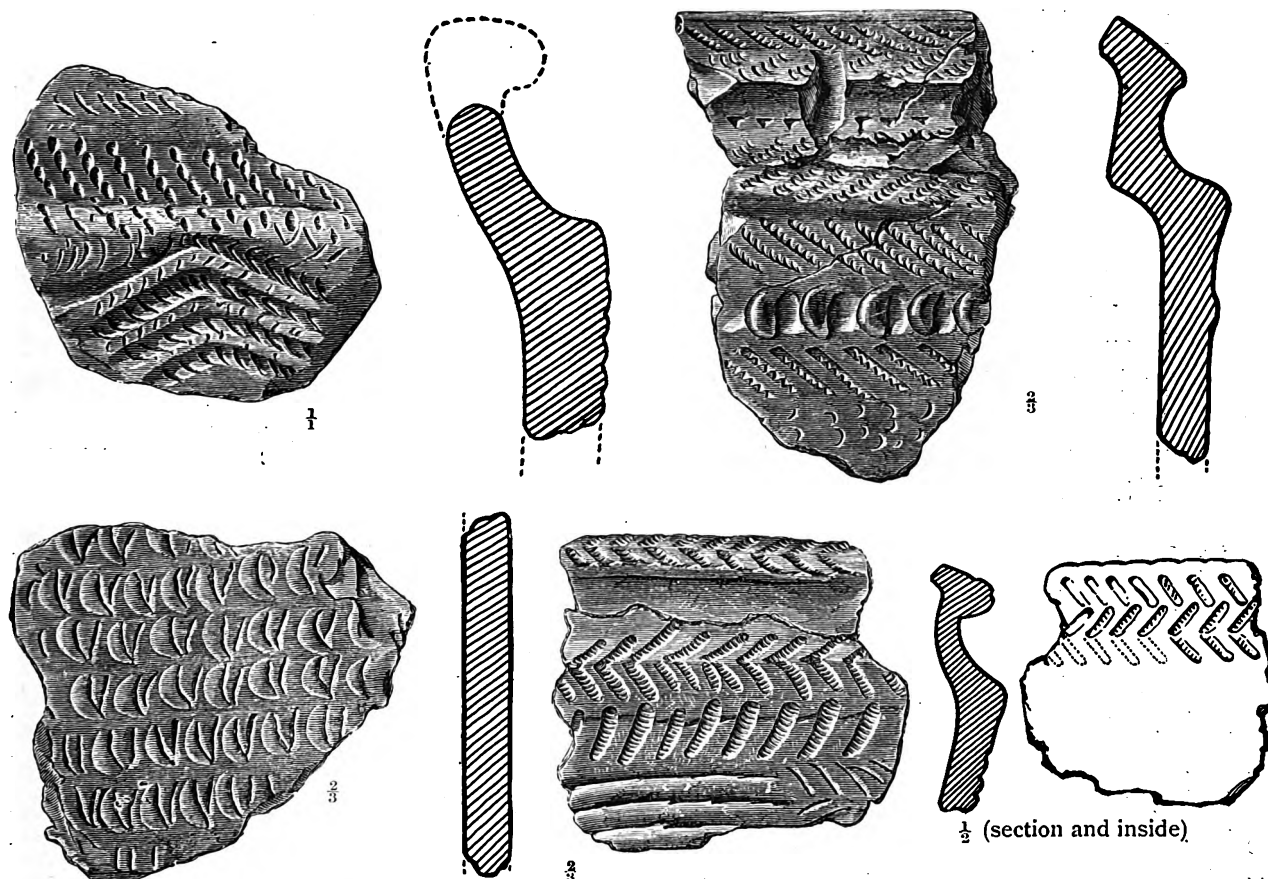


Fig. 7. Neolithic fragments, with sections, West Kennet long barrow, Wilts.

plete specimen in the British Museum from Châtillon, Switzerland (doubtless from a Bronze Age lake-dwelling), has nearly vertical sides, but dimensions in the same proportion: $7\frac{3}{4}$ in. at the mouth, and $2\frac{1}{4}$ in. high. These vessels were probably used like the modern colander, but the original form of the second exceptional fragment cannot be determined, though the incised lattice pattern of double lines on a burnished black surface points to the Early Iron Age or the Roman period.

¹ *Archaeologia*, xxxviii. 415, figs. 8, 9.

Though the barrow was opened at a later date, it is worthy of remark that the contents were but partially disturbed, as was proved by the condition and order of the skeleton, and by the defined character of the layer of black matter immediately above them. Not a trace of burnt bone or other sign of cremation was met with, and there was a complete absence of metal or anything implying the use of it. Dr. Thurnam continues:

The quantity of coarse native pottery was very remarkable. At first it was thought that the heaps in the angles of the chamber would prove to be the fragments of vases deposited entire when the funeral rites were completed. This, however, was not the case, and whence the fragments came and why here deposited must be matter of conjecture. . . . That the fragments found in the chamber were those of domestic vessels required for the funeral feast is by no means clear; for in such case, had the mass of fragments been deposited, it would have been possible to reconstruct at least some of the vessels. As it is, the variety of form and ornament, of colour and texture displayed by them is even more remarkable than their number. In hardly more than three cases were two or more fragments of the same vessel met with. In stating that there were parts of not fewer than fifty different vessels, we shall probably be very much within the truth. They have been of every size, from that of a small salt-cellar to a vase holding a couple of gallons. . . . The ware appears to have been more profusely covered with ornament, impressed or scored, than the cinerary urns in the barrows of south Britain usually are. In this respect it assimilates more to the style of the "drinking-cups" of these barrows.

It does not seem likely from the account that any drinking-cups or beakers were represented among the fragments from this barrow, but in the light of recent discoveries in Haddingtonshire and at Peterborough, Thurnam's words seem almost prophetic; and now that the beaker is shown to have been a domestic as well as a sepulchral vessel, the marked difference in thickness between the hemispherical bowl and the earliest pottery of the round barrows has to be considered. The thinner vessels were more highly ornamented than the bowls, and practically their whole surface was covered with patterns, produced with a pointed or notched stick, or a disk with notched edges that revolved over the wet clay. The zones left plain are fairly narrow, whereas the lower half of the neolithic bowls was sometimes left unornamented. The latter type generally has a herring-bone pattern consisting of repeated impressions of a twisted thong, or possibly a shell; and above the hollow moulding, which was practically inaccessible, the decoration is continued on the lip and inside the rim, the upper edge having a series of sloping transverse lines.

There are, however, fragments of neolithic ware from the Peterborough pits that deviate from what may be considered the normal pattern. The most

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striking is a piece about 3 in. square of greyish ware (fig. 8), with enough curve to indicate a maximum outside diameter of $14\frac{1}{2}$ in. The paste is necessarily good for a vessel of that size, but comparatively thin, additional strength being derived from a thick moulding between the spaces filled with finger-nail pattern. The curve inside shows that from this point sprang the shoulder, and the vessel may have been constructed on the lines of a beaker.¹ Two other fragments of black ware with yellow faces show an in-turned rim, the exterior bearing finger-nail ornament, and the wall being set at the angle seen in the accompanying



Fig. 8. Fragment of large drinking-cup (?), Peterborough. $\frac{1}{2}$.

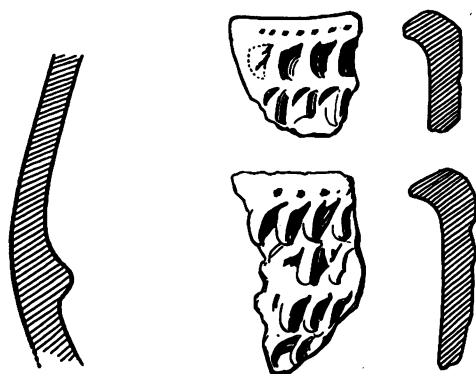


Fig. 9. Fragments with in-turned rim, Peterborough. $\frac{1}{2}$.

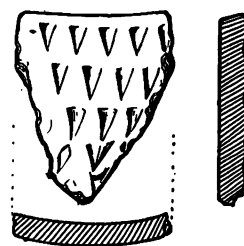


Fig. 10. Fragment with plain edge, Peterborough. $\frac{1}{2}$.



Fig. 11. Fragment with double groove, Peterborough. $\frac{1}{2}$.

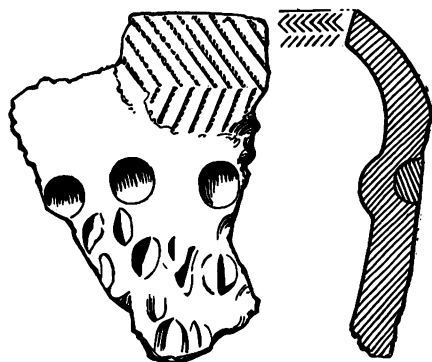


Fig. 12. Pitted fragment with section and lip ornament, Peterborough. $\frac{1}{2}$.



Fig. 13. Pitted fragment, with section and interior design, Peterborough. $\frac{1}{2}$.

section (fig. 9). Another (fig. 10) includes part of a plain upper edge with a similar impressed pattern in rows; and a larger fragment (fig. 11) furnishes a new variety with an outside diameter at the mouth of 10.2 in., the lip bevelled from within, and the outside ornamented with a deep impressed pattern that might be called a series of holes, with a double moulding below the lip-band. The paste is better than most and baked fairly hard, but the entire form must for the present remain uncertain. Two other fragments (figs. 12, 13) have not only

¹ Perhaps like one from Somersham, Hunts., $10\frac{1}{2}$ in. high, preserved in the Cambridge Antiquarian Museum. *Proc. Soc. Ant. Scot.*, xxxviii. 386, fig. 71.

incised ornament on the inner edge of the lip, but a row of deep circular indentations or pits outside ; and the sections show peculiar varieties of lip which are no doubt contemporary, but do not correspond to the typical round-bottomed bowl.

The deep indentations below the lip of these last fragments are strongly suggestive of contemporary pottery found in Finland and certain parts of Sweden. In the former country many fragments have come to light with a herring-bone pattern in horizontal bands divided by rows of deep circular indentations, which are also common below the lip¹; while in Sweden the parallel is still more complete. A large quantity of sherds came from neolithic sites at Aloppe and Mjölkbö, Uppland, with simple impressed and incised patterns chiefly zigzag, and horizontal rows of pits: the top edges were also ornamented, and the bases uniformly rounded.² The fragments were generally small, but some evidently belonged to large vessels, and a few small cups were represented. Several vessels were contracted at the neck, with slightly spreading lip, and the decoration was almost exclusively on the upper part of the bowl, consisting of lattice design, impressed rings, and crescents. The paste had a certain proportion of quartz and felspar grit.

Neolithic pile-dwellings at Alvastra, on the eastern shore of Lake Vätter, have lately been investigated,³ and produced pottery in small fragments, with grit in the paste and much weathered. The ornamentation included rows of small or large pits, of circular or irregular shape, sometimes associated with horizontal zigzags. Two pieces illustrated have also decoration on the upper edge. They date from the period of the *gånggrifter* (chambered barrows dated by Professor Montelius 2500-2000 B.C.), and the site seems to have been a meeting-place of the South Scandinavian and East Swedish cultures. The pitted pottery is said to be characteristic of the latter area, which was inhabited by hunters and fishers, while in southern Scandinavia agriculture and domestic animals betokened a higher civilization.

The characteristic decoration of the drinking-cup or beaker is well known, and full justice has been done to the Peterborough series by our Fellow Mr. Praetorius, whose skilful reproduction of the patterns gives additional meaning and value to the series of fragments, and renders a detailed description unnecessary. The beaker has also been handsomely treated by Hon. John Abercromby, who has already published two fully illustrated papers⁴ on the type, and is about to

¹ Brögger, *Den arktiske Stenalder i Norge*, 136, 137, etc.

² *Fornvännen*, 1906, 101, figs. 8-26; cf. p. 257.

³ *Ibid.* 1910, 58, figs. 53, 73, 78-80.

⁴ *Journ. Anthropol. Inst.*, xxxii. (new ser. v), 373; *Proc. Soc. Ant. Scot.*, xxxviii. 323, with 172 figs. and map of distribution.

issue a new volume on the subject which will bring the British series into relation with the neolithic Schnurbecher and Zonenbecher of the Continent.

Apart from the beakers, some of which are of exceptional size but otherwise quite normal, the present discovery affords an opportunity of following the history of the round-bottomed neolithic bowl; and the accompanying illustrations (pl. XXXIX) will convey a better impression than any verbal description of what I take to be its development into the "food-vessel" of the barrows. It is true that beakers have been found in long barrows,¹ but the association of the bowls with that type of barrow is now established, and it will be admitted that the beaker is normally found in round barrows, and with unburnt bodies, occasionally with bronze objects. Much the same may be said of "food-vessels", though this type is often found with cremated remains, and seems to have passed through a time of transition in respect to burial rites. Beakers are occasionally found with food-vessels in the same grave (though not with the same body),² but they are quite distinct in form, material, and decoration. Certain food-vessels might almost be taken for neolithic bowls if they had a rounded base, and there appear to be intermediate links connecting these two forms. One more instance must be given in detail, as the discovery was evidently rather a puzzle to the excavators, and none of the usual names of sepulchral pottery seemed applicable. The vase (fig. 14) has been restored not altogether satisfactorily, and was presented to the British Museum by Dr. Greenwell. It is 4 in. high, the ware pinkish brown, fairly thin and hard, with a fair proportion of grit; and the ornamentation consists of curving but irregular groups of lines made with a toothed stick. This vase, which is also ornamented on the top edge, was found just above a stone chamber in a long barrow at Upper Swell, Glos.,³ but was considered by the excavators to have had no connexion with it and to be of considerably later date. Though the ware is comparatively thin and the bottom flat, the profile recalls that of the neolithic bowls, and is distinct from any recognized Bronze Age type.

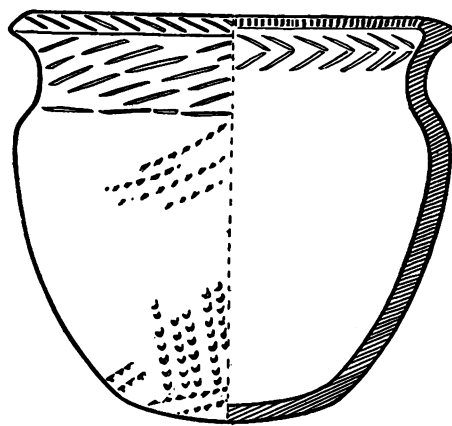


Fig. 14. Vase with section, Upper Swell long barrow, Glos. $\frac{1}{2}$.

¹ Examples in British Museum from Thurnam collection, found at Wilsford Down (*Archaeologia*, xliii. pl. xxxi. fig. 1), and Figheldean, Wilts.

² This appears to be the case from Dr. Greenwell's tables in *British Barrows*, p. 458, and his additions in *Archaeologia*, lii. 1. Mr. J. R. Mortimer knows of no instance of the two types being found with the same body: when found in the same grave the drinking-cup is on a lower level (*Forty Years' Researches*, 223).

³ Greenwell, *British Barrows*, 523; *Journ. Anthropol. Inst.*, v. (1876), pl. v. fig. 3 (view of stone chamber above which it was found).

Irish "food-vessels" are often shallow in proportion to their diameter, and many have no well-defined foot, the lower portion being practically in one curve. One vessel (pl. XXXIX, fig. 1) found in a stone cairn in Ireland is cylindrical above and rounded at the base, and the same variation of the typical neolithic bowl has been found in chambered cairns in Bute and Argyleshire.¹ That this form passed almost insensibly into the "food-vessel" of the round barrows is suggested by the accompanying illustrations of specimens from Ireland in the British Museum, the exact sites being unfortunately not recorded. Certain finds in Scotland² suggest that a similar evolution went on in the south-west, but the series is at present not so complete as in Ireland.

The connexion between figs. 2-4 on the plate will hardly be questioned, the rounded base being flattened just enough to allow the latter to stand alone. In fig. 3 the mouldings are not so pronounced and are placed closer together, while the fourth specimen of the series has the mouldings somewhat bolder than before and reaches the true food-vessel type of the Bronze Age, tapering to a comparatively small base. The similarity of the ornament on all four vessels proclaims community of origin and no great difference of date; and it is significant that food-vessels are plentiful in Ireland, the ornamentation of the upper edge being retained throughout, and the profile gradually changing during the early days of bronze.

At present there seem to be no remains of typical "food-vessels" from domestic sites, though in view of recent discoveries it would be unwise to regard that type as exclusively or essentially sepulchral. That the "drinking-cup", a vessel as highly decorated, much thinner, and better made, was a household necessity as well as a desirable piece of grave furniture is now clearly demonstrated.³ The discovery of two neolithic bowls and two drinking-cups on the same spot in the bed of the Thames at Mortlake is curious, but not so convincing as two recent finds in Scotland, which I proceed to summarize.

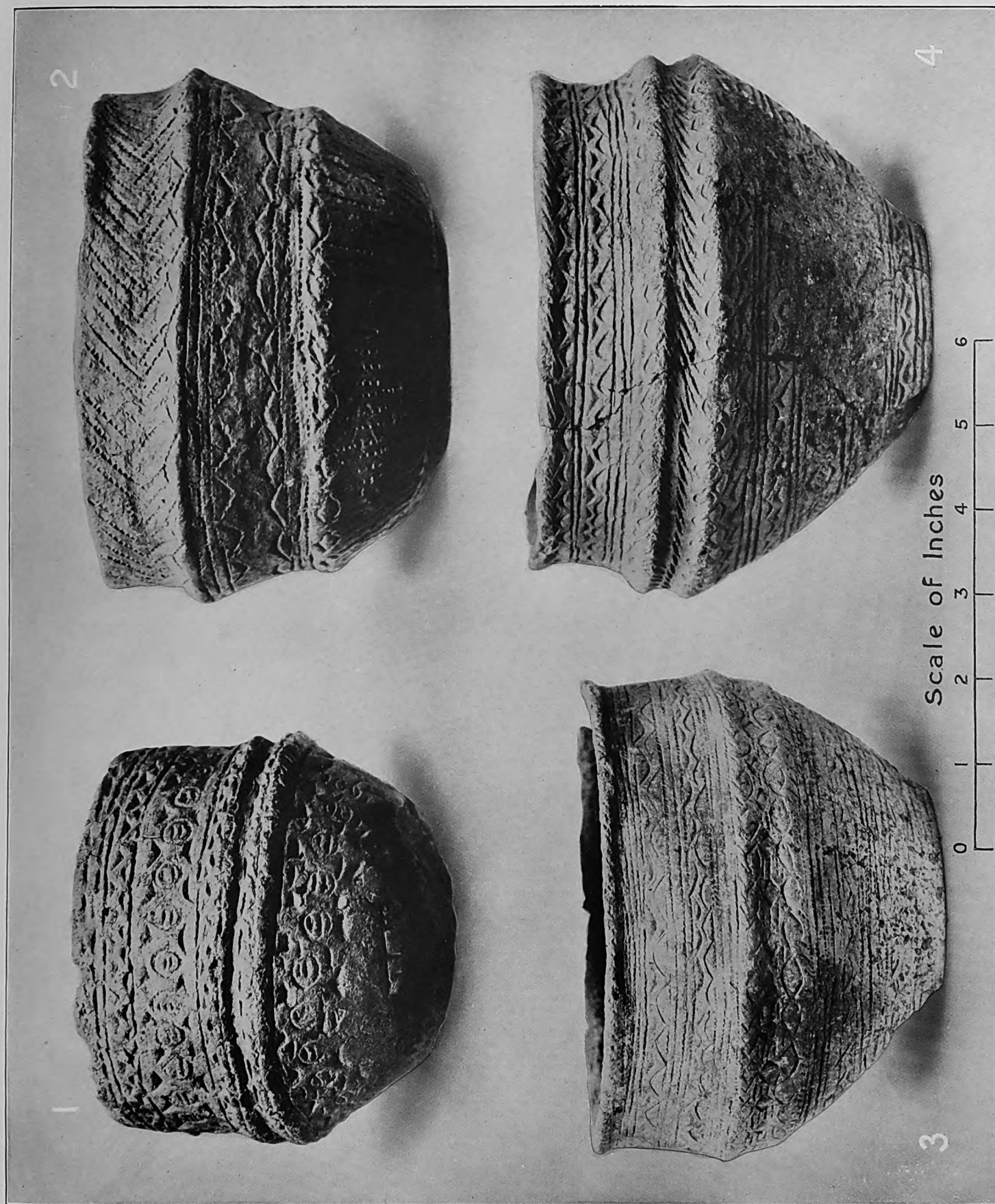
In November 1907 some kitchen-middens on the links fringing the shore on the east side of Gullane Bay, Haddingtonshire, were examined by Mr. Alexander Curle with interesting results.⁴ The middens were marked by accumulations of shells in the blown sand, and at three spots a quantity of pottery was

¹ See note *ante*.

² A somewhat globular example from Oban (Anderson, *Scotland in Pagan Times: Bronze and Stone Ages*, 85, fig. 106) has rings enclosing parallel lines like the round-bottomed bowl on pl. XXXIX; and the later form, with double moulding and indented chevrons, has been found at Kinneff, Kincardineshire, and Tormore, Arran (*ibid.* figs. 66 and 117).

³ It may be added that drinking-cups of type β were found in pits at Hitcham, Bucks., and are now in the British Museum. A brief account is given in *Maidenhead and Taplow Field Club Report*, 1890-1, 46.

⁴ *Proc. Soc. Ant. Scot.*, xlii. 308.



EVOLUTION OF FOOD-VESSELS IN IRELAND

Fig. 1. Neolithic bowl. Figs. 2, 3, 4. Bronze Age food-vessels

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found that could be readily grouped into two main classes, (1) thick coarse vessels of large diameter and (2) vessels of finer texture and smaller diameter, with decoration in repeating zones. Of the first class, fragments were collected representing five vessels of thick and heavy ware, three at least of which were cylindrical with raised mouldings either on the inside or outside of the lip (see figs. 4, 5 of original account). The diameters of this type were calculated to be roughly $9\frac{1}{2}$, $7\frac{3}{4}$, and 10 in.

The second class is represented by remains of no less than twenty-seven vessels, two of which could be sufficiently restored to show the original shape of at least their upper portions; and their identity with the so-called "drinking-cups" of Bronze Age burials is unmistakable (see figs. 6-9 of Mr. Curle's paper). There was the same decoration in repeating zones, the same combination of chevrons, diapers, and straight lines made with a pointed tool or a comb, or by impressing a twisted thong. The texture and thickness of the fragments also corresponded to the "barrow" type and the dimensions were analogous, though the measurements are not recorded. All those with corded pattern only and some of the other specimens had the lip bevelled, the slope being on the inside; while the remainder had a blunt lip of the same thickness as the body. None of this second ("drinking-cup") class showed the sooty incrustation or discoloration of the first class, characterized by its weight and thickness; nor were the two kinds found intermingled in all the middens. At the first spot examined no fine decorated ware except that with the corded pattern was found, whereas in the second midden, almost contiguous, there were no traces of the heavy ware. The third midden contained fragments of thin red ware decorated with the impressed thong or cord, three ornamented in the "drinking-cup" style, and one of the thick coarse ware of the first midden. The associated finds were few and unimportant, throwing very little light on the date of these rubbish-heaps except in a negative way, as no ancient metal was recovered; and it might therefore be argued that all these sherds belonged to the neolithic period, though the ornamented ware is certainly found elsewhere occasionally with bronze.

In the spring of 1907 a mediaeval paved floor was found at a depth varying from 14 in. to 4 ft. by Mr. James Cree, in his vegetable garden at Tusculum, North Berwick, Haddingtonshire; and further excavation resulted in the discovery beneath it of a prehistoric kitchen-midden consisting of a stratum about 1 ft. thick and about 8 ft. from the surface, extending over an area about 50 yd. by 12 or 15 yd. The site is about 250 yd. from the sea, and the abundance of whelk-shells indicates the principal food of the prehistoric inhabitants, though there were also large numbers of limpet and land-snail shells. A few bone tools, stone pounders, and part of a hammer-head with the perforation begun on both faces, also some flint flakes and one good flint knife, throw further light on the

stage of civilization then reached in these parts, but the most important finds were fragments of pottery that can be approximately dated, and are quite in accord with the negative evidence afforded by the stone relics. Fragments of a bell- or tulip-shaped beaker ($6\frac{1}{2}$ in. outside diameter of lip) when pieced together showed the section except near the base, and the outside bore the usual ornamentation of horizontal lines practically covering the body. Other fragments, admirably illustrated in the original account,¹ belonged to straight-sided or at least to straight-lipped vessels, either of thin ware like the ordinary drinking-cup or beaker with horizontal lines, or of thick coarse ware with horizontal, crossed, diagonal, or vertical lines, and sometimes bevelled inside the lip. Altogether from this stratum no less than 734 fragments of pottery were recovered, none of large dimensions, but all referable to very distinct types. At a distance of 30 yards another midden was found, and proved over an area 64 ft. by 25 ft. It averaged 1 ft. in thickness and was 5 ft. from the surface. The finds were practically identical with those already described, but a few had a moulding or ledge a little below the rim, one at least had an incurved lip, and there were a few specimens of plain ware, fairly thick, with everted lips. Mr. Cree summarizes the pottery finds as follows:

All the potsherds from midden no. 1 were of fine texture, and none of great thickness. This can also be said of a considerable portion of the sherds found in midden no. 2. Generally speaking, only a few of the rims found in both middens were plain, the large majority being decorated. No fewer than 454 potsherds of various sizes and thicknesses were found in the excavation of midden no. 2. A number of these were of the impressed cord pattern, and were of similar thickness to those in midden no. 1. Numerous fragments however were of much coarser texture, some plain, others decorated, and it would thus seem that the two middens may not have been contemporaneous.

In the illustrations, however, there is little to confirm the author's suspicions that some of the fragments belonged to cinerary urns, as there were no signs of burials of any sort on the site, or of the overhanging lip that is so characteristic of Bronze Age cinerary urns. The many coincidences noticed in the paper are all in favour of the view that the two middens are contemporary or only separated by a brief interval of time. The uniformity of the majority is certainly striking, and the traces of soot on several specimens is proof enough that the so-called drinking-cup or beaker was used both for domestic and sepulchral purposes. The complete absence of metal in these layers was particularly noted; and this, combined with the rarity of bronze in connexion with beakers buried with the dead, suggests most strongly a very early date in the Bronze Age, or their attribution in Britain (as on the Continent) to the neolithic period.

¹ *Proc. Soc. Ant. Scot.*, xlii. (1907-8), 253.

We now seem to have something more than negative evidence with regard to the date of beakers in Britain, and the association with neolithic ware is all in favour of the introduction of the beaker into this country before bronze was in use on this side of the North Sea, though metal had become fairly common before the beaker passed out of fashion. It is tempting to suppose that the thin tall cups were introduced by strangers who first settled along our eastern coasts; but that in time the native tradition reasserted itself and a modification of the neolithic bowl took the beaker's place in the grave.

The map prepared by Hon. John Abercromby to show the distribution of the "drinking-cup" or beaker is justly considered by him to indicate its introduction across the North Sea, and its home may some day be determined with precision. The domestic finds in Haddingtonshire are actually on the sea-shore, and Peterborough was much nearer the sea 4,000 years ago than it is to-day. The number of sites diminishes towards the west; and, according to Mr. Coffey¹ who has specially examined the evidence, there is only one find of drinking-cups in Ireland, fragments of three or more having been found together at Moytirra, co. Sligo. On the other hand, "food-vessels" of a peculiar form, shallow, rounded, and highly ornamented, are common in South Scotland and Ireland, and do not occur elsewhere, though taller specimens, of conical form, are frequent in certain parts of England, as well as in Scotland and Ireland. An attempt has been made above to show that the intermediate links between the neolithic bowl and the Bronze Age "food-vessel" are represented by Irish examples; and the corollary seems to be that the indigenous neolithic population was driven westward by invaders from beyond the North Sea, and taking refuge in South Scotland² and Ireland developed, especially in the latter country, their traditional pottery type and in time reached the form that reappears on the east coast of Britain as the "food-vessel". The explanation of this revival may be that the invaders were by degrees absorbed or overwhelmed by the neolithic stock, and the imported type of pottery gave way to the native ware which had developed elsewhere in the meanwhile. Two thousand years later practically the same thing happened again: Celtic artists took refuge from the Roman advance and further developed in Ireland, during the first four centuries of our era, the art that British genius had evolved from the Early Iron Age of the Continent. Its renaissance in England followed in the late Anglo-Saxon period.

The "food-vessel" does not correspond to any known continental form, and

¹ *Journ. Anthropol. Inst.*, new ser. v. 397; Wood Martin, *Rude Stone Monuments of Ireland*, figs. 146-8. It should be noted that the only type found in Ireland is Mr. Abercromby's β type, corresponding to the Zonenbecher, tulip or bell-form beaker of the Continent, another indication that the beaker folk of our east coast never crossed St. George's Channel.

² The round-bottomed bowl, drinking-cup, and food-vessel were all found in cairns near Crinan, Argyleshire, by Dr. Greenwell (*Proc. Soc. Ant. Scot.*, vi. 341, pl. xx. figs. 1-3).

can now be regarded with some security as a native invention or development. Continental analogies may help us to determine the racial affinities of the "drinking-cup" folk who also belonged in part to the neolithic period, but there is a further problem, to determine the ethnological character of the aboriginal neolithic inhabitants of this country in the light of their pottery, their funeral rites, and skeletal peculiarities. To connect them with the earliest known inhabitants of what is now Finland, on the strength of some resemblance in the pottery of these two regions, would be premature and unwise; in fact, the Finnish theory has long ago been brought forward and dismissed. But pending further developments, there can be no harm in supposing that the neolithic population of our islands belonged to a stock that occupied the extreme north of Europe, possibly extending into Asia, and was distinct from the races of Central Europe. To inquire whether the former were the direct descendants of the palaeolithic hunters who followed the reindeer northwards is beyond the scope of this paper.



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XV.—*Canterbury Cathedral Choir during the Commonwealth and after, with special reference to two oil paintings.* By W. D. CARÖE, Esq., M.A., F.S.A.

Read 1st December, 1910.

I AM not quite sure how far the later records of Canterbury Cathedral are of sufficient importance to interest this Society, but, as we have long learnt that neither archaeology nor traditional architecture stop short in the middle of the sixteenth century, I exhibit two oil paintings of the interior of the choir of Canterbury Cathedral as in the latter half of the seventeenth century, and offer some notes upon them. A study of later documents, chiefly relating to destructions or replacements, certainly helps to throw light upon earlier history.

No. 1. In oil, on canvas; size, 3 ft. 5 in. by 2 ft. Inscribed upon the pavement:

Thos. Johnson fecit. Canterbury Quire as in 1657.

Y^e prospecte from y^e Clock House.

Picture in my possession.

No. 2. In oil, on canvas; size, 4 ft. 0 $\frac{3}{4}$ in. by 3 ft. 2 $\frac{3}{4}$ in. No inscription or signature. Point of view about the same as no. 1, but a little more elevated. Picture in possession of the Rev. A. J. Mason, D.D., Canon Residentiary of Canterbury and Master of Pembroke College, Cambridge, by whose kindness I am able to make the exhibit.

No. 1. (PLATE XL.)

I bought the picture from a Mr. Haines, of Norbiton, who could give no information about it save that it had belonged to his father, just deceased. It was clouded with dirt and a dark-brown varnish to such an extent that no detail was visible unless the surface were wetted, but *per contra* it was highly recommended to me as enclosed in a fine gold frame, which I spare the Society. The removal of this frame and the varnish and dirt displayed the picture as you now see it. I can find little or nothing about the painter. In the original edition of Dugdale's *Monasticon*, published in 1655, five of the illustrations of Canterbury are drawn by

Johnson, two being engraved by Wenceslaus Hollar, and three by Daniel King. These include the plan, which was repeated with slight changes in Dart's *Canterbury* and elsewhere. This plan is frequently referred to by Professor Willis as Hollar's plan, when it ought to be called Johnson's. If we judge by the drawing I now exhibit it is abundantly clear that Johnson was a better draughtsman than Hollar or King were engravers. Dugdale's illustrations bear no relation either as regards skill or accuracy to the work before us.

Johnson appears in the Print Room Catalogue at the British Museum thus: 'T. Johnson. Worked about 1675,' and the nation has an interesting wash and pen drawing by him, signed and dated 1675, depicting the King's and Queen's Baths at Bath.

In Mr. Laurence Binyon's *Catalogue of Drawings by British Artists* he is thus described: 'Johnson T. Worked about 1651-1675. Draughtsman. Made drawings of Canterbury etched by Daniel King for his *Cathedral and Conventual Churches of England and Wales*; possibly also the engraver of a mezzotint portrait of Bullock the Comedian.'

Johnson is referred to in Walpole's *Anecdotes of Painting* thus: 'T. Johnson made a draught of Canterbury in 1651 which hangs upon the stairs of the Library belonging to the Cathedral.'¹

In Gough's *British Topography*, vol. i, p. 455, we find: 'Mr. Johnson of Canterbury showed the Royal Society, 1685, a curious prospect of the Cathedral, and several views of the adjacent country drawn by himself in oil colours. He made a draught of Canterbury 1651, which hangs on the Cathedral Library stairs.'

This entry is confirmed by reference to Birch's *History of the Royal Society*, vol. iv, p. 399 (1756), which gives the date May 13, and from which we learn that Samuel Pepys was President and Sir C. Wren a member of Council in that year, Sir Christopher having already passed the chair.

Johnson is frequently confused with another T. Johnson, a mezzotint engraver, who worked in Queen Anne's reign and later. Hence the last paragraph in the extract from Mr. Binyon.

Now both these pictures are painted from the top of Prior Chillenden's pulpitum, which is under the Angel Tower. The exact spots where the artists' easels rested are ascertainable. It will be observed, however, that both have taken a liberty with the science of perspective as expressed on paper. They have turned their heads to paint the two sides of the upper part of their pictures. On the north side the transverse lines vanish to the north, and on the south to the south. Si ars sit celare artem, all the more may we congratulate at least Johnson in having with no small success wrapped up this licence and

¹ Walpole, *Anecdotes*, ii, p. 123.

produced a singularly natural result, avoiding that perspectival distortion of which we are conscious only on paper or canvas.

In reference to the Clock House, we find the Angel Tower referred to as the Clock House, and indeed the words 'clock house' were used almost as a synonym for 'tower'. Battely says, *Antiquities of Canterbury*, 1703:¹ 'I find in an account made in the year 1316 that five bells were bought, the first was called Bell Thomas and dedicated to St. Thomas the Martyr which was hanged in the great steeple or Clock House and weighed 8000 pound.' We know also that there was a clock on the pulpitum from the drawing by James Cole in Dart,² c.1726. The clock works would have been cased by a considerable enclosure, and we may I think assume that the pulpitum was intended by Johnson.

In 1292 Prior Eastry erected the 'Novum orologium magnum' at a cost of £30.

In the Sacrist's Inventories the clocks first appear in 1689: 'In the Quire one greate clocke and one quarter clocke.' The same entry occurs in 1735, 1745, and 1752, and no doubt in 1761, were not the greater part of that inventory missing.

A few general references to the picture's accuracy of detail are called for. The ornaments upon the groin ribs (billets, &c.) are correctly given. The capitals are admirably and accurately drawn. In one of them the angle of the abacus and foliage is shown flushed off, and the section is correctly drawn. Knowing from this picture of this defect, it is now possible to see where a repair has been effected, presumably by Austin. The number of squares in the pavement is correct. There was a small circular platform in the centre of the first step up to the sanctuary. This is clearly indicated, and part of the stone still exists. The number of divisions, and their disposition in regard to the pillars, of Prior Eastry's additions to the parclose screens is absolutely exact.

The hooks by which Prior Goldstone the second's and Richard Dering the cellarer's hangings depended on Eastry's screen are shown. These hooks were cut out by Austin and the pieces of stone then let in are now to be seen. There were four sets of hangings. Three sets were given by Goldstone on the south side, 'Tres pannos pulcherrimos opere de arysse subtiliter intextos ortum virginis cum vitâ et obitu ejusdem clare et splendide configurantes,' and inscribed 'Thomas Goldstone hujus ecclesiae Prior Sacraeque Theologiae Professor me fieri fecit Anno Dom. Millesimo quingentesimo undecimo' (1511). The fourth set was given by Richard Dering, and hung on the north side. It consisted of six pieces, with the story of Christ and Our Lady, and was inscribed 'Richardus Dering

¹ *Antiquities of Canterbury*, by Wm. Somner, revised by N. Battely, p. 23.

² *History and Antiquities of Canterbury Cathedral*, J. Dart, 1726.

hujus ecclesiae Commonachus et celerarius me fieri fecit Anno Dom. Millesimo quingentesimo undecimo.' The hangings, not quite complete, are now in part in the choir of the cathedral and in part in the Archbishop's Palace at Aix-en-Provence. A description of them by Dr. M. R. James, Provost of King's, appears in *Cambridge Antiquarian Society's Communications*, vol. xi, p. 506.

The hooks upon the pillars were doubtless for banners. They have been removed. The hooks shown under the clerestory string still remain *in situ*.

In the arcade the scale of the masonry is correctly given. Again, Anselm's rougher Norman work is differentiated from that erected after the fire of 1174, and we may note that the somewhat decayed archivolt of the window in the north aisle as shown by Johnson is now made up with modern plaster.

Wall-paintings now lost are shown on both outer walls of the aisles. On the north is apparently a pilgrimage to a shrine. In the background is a tower upon a conical hill which reminds one of Glastonbury Tor. On the south is a figure of Our Lord or a saint amid rays. Here we see clearly the coat of whitewash partly peeled off, and it appears that, although texture and jointing are shown by Johnson, he means to convey these as seen through the whitewash, and thus faithfully renders the surface in a somewhat pasty manner. Now, we have many references to the whitewashing of the interior from the thirteenth century onwards: thus in 1391-2 a receipt 'De Domino Priore [Chillenden] ad dealbacionem chori', and several similar entries totalling to the considerable sum, in those days, of £22 8s. 10d.

We have Chichele's monument, and Bouchier's monument, specially constructed, I may remind you, so as not to interrupt the light from a window in the north aisle shining upon the altar. Henry IV's monument is just indicated, and we see the back of the praying Wootten, first dean of the new dispensation. The ungainly chest tomb of Cardinal de Chastillon seems to have been in the same state in 1657 as now. The point of view allows us to see nothing more till we find Kempe's monument with its wooden canopy. The archbishop's throne is not.

The paintings upon and around the bosses of the roof generally appear disguised in various semi-classic forms in early drawings of the cathedral. Here we have probably a faithful record of their real form.

Other objects lost to us are here recorded. Woolnoth¹ refers to the stalls of the monks remaining till 1704, and Mr. St. John Hope's courtesy, coupled with his unrivalled knowledge of the cathedral and its documents, enables me to give a reference to the stalls from the Treasurer's Accounts, from which it appears that they were Prior Eastry's work as well as the screen behind them. Eastry was

¹ *Graphical Illustration of Cathedral Church of Canterbury*, W. Woolnoth, 1816, p. 44.

prior 1285-1331, and under date 1298-9 among the *Recepta de obventionibus* are these two items:

De Reginaldo Noldekyn—pro novis stallis in choro xx. li.
Pro novis stallis inferioris chori faciendis xvii. li. xviii. s. iii. d.

The histories of the pavement and also of Prior Eastry's screens are given by Gostling¹ (1796) and Willis² (1845), and need no fuller description here than that of the choir itself, so ably narrated by the latter, save to say that as Eastry erected his pulpitum and the north and south doors of his screens in 1304-5 it would seem that these were continuations of work commenced by him some six years earlier—a point not hitherto noticed.

The parclose screens were covered with panelling on the choir sides in 1676. On 2 August of that year Roger Davis, 'cittizen and joyner' of London, entered into articles of agreement with the Dean and Chapter for its execution. It is to be

of as good materials & of such scantlings & thicknesses and in as good and workman-like manner as is the wainscott now made and sett up in the Mercers' greate Hall in London.

Payment is to be according to schedule: the wainscot, per yard, 15/-; each capital, 14/-; each mitre and palm, 14/-; the 'architrave, cornish and scrowles,' 1/6 per foot run. Davis undertakes at the signing of the contract to include the enrichment of the panel mouldings, and words are added to the articles. To these are attached a neatly-executed geometrical drawing, an interesting specimen of the draughtsmanship of the day. In 1682 Roger Davis entered into further articles for the erection of the stalls of the deans and prebends, still existing against the east side of Chillenden's pulpitum. The pillars of this work are described to be 'fluted according to the pilasters that are now up in the Quire with bases and capitals'. It is interesting to note that this work was executed in 'Dantzic' and 'Quinborough' oak, Queenborough no doubt being the port of entry for Baltic timber.

Further, the panelling of 1676 had not been extended westward beyond Eastry's screens, and there remained the two solid walls of the arcade responds to cover. In the second Roger Davis's agreement we read accordingly:

Two pieces of wainscott to be made, one on the North side and one on the South side which is to make good from the Prebends seats to the wainscott now up and done according to the said design, with the same carving and scantling as the other wainscott up the sides now set up.

¹ *A Walk in Canterbury*, Wm. Gostling, 1796, 4th ed.

² *The Architectural History of Canterbury Cathedral*, R. Willis, 1845.

These pieces of wainscot still exist *in situ*, but the other panelling referred to was used up in Captain Austin's house in the Precincts. Some five years ago it was recovered as far as possible, and it is now, in an incomplete state, stored in the cathedral. It is correctly drawn in Cole's plate in Dart, executed about 1716, although not published till 1726 (plate XLI).

The thirteenth-century stalls gave way to those shown by Dart in 1704-5. We find an agreement dated 7 Dec., 1704, between the Dean and Chapter and John Smallwell, citizen and joiner of London, who was at work also upon St. Paul's:

The said John shall set up two ranges of pews of good right wainscott well matched on each side of the Choir leading from the Dean and Prebends Stalls up to the Archbishop's throne in the said Choir with suitable benches before the outside pews for the choristers and Kings' Scholars . . . and the pews and benches to be finished as well and in a good workmanlike manner as the pews and benches that are in the Choir of the Cathedral of St. Paul, London. The price to be at the same rate as paid for timber work at St. Paul's. The old timber and wainscott now standing in the Choir to be used as far as possible.

The estimate was £300. These benches remained till 1879, when Sir G. G. Scott removed them, but the wainscot was removed in 1836 by Austin.

Iron Screens. The iron screen which closed the south aisle is clearly shown surmounted by a wooden cornice of Eastry's date. Part of this cornice is used up in a repair of the roof of the watching chamber over St. Anselm's Chapel. It was in existence when Storer made his plate in 1816 for Woolnoth¹ (plate XLII), at which time the organ was on the pulpitum. 'Over this Screen,' says Gostling,² 'is placed the organ which formerly stood in the Northern side of the Choir above the Stalls.' The iron screen which separated the choir from the Trinity Chapel is, I believe, correctly drawn by Johnson. It originally had a rich cornice, for it is referred to by Gostling² as 'a fence of ironwork finished at the top with a rail or cornice of wood painted with some of those ridiculous and trifling fancies with which the monks were everywhere fond of making the preaching orders of friars appear as contemptible as they could'.

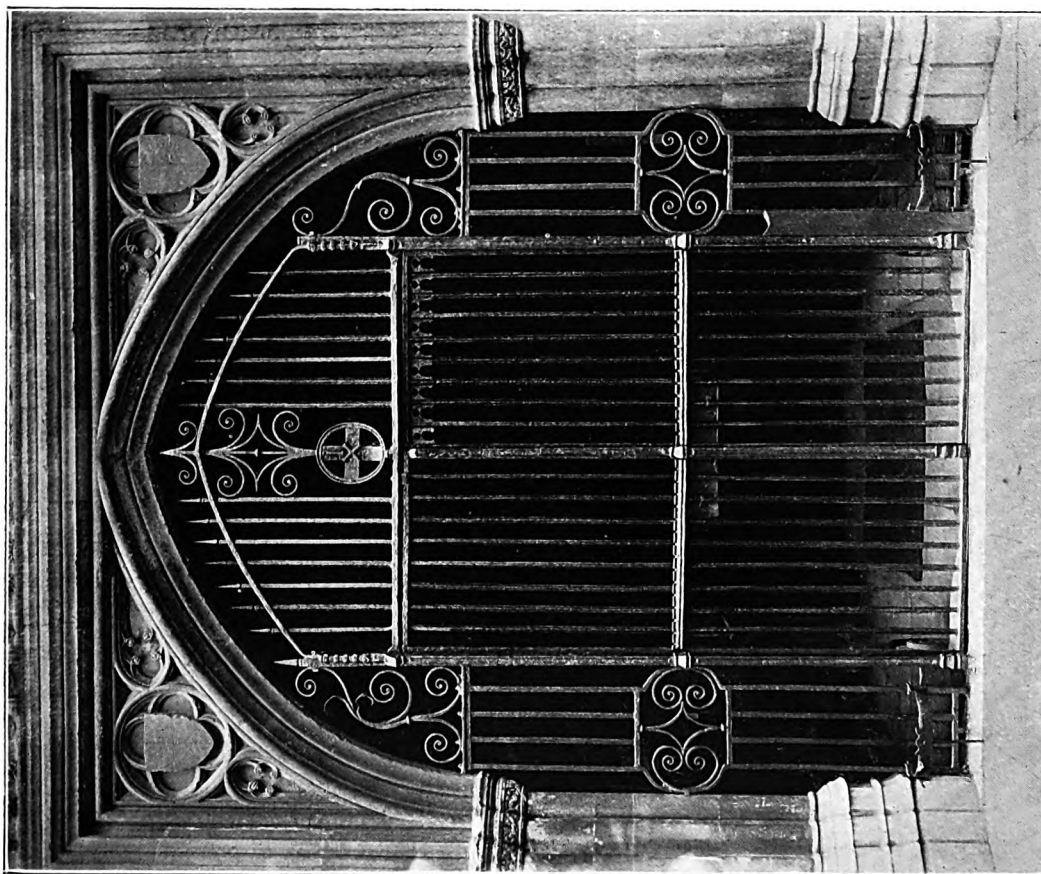
Somner³ (1640) has a reference to 'the grate between the Archiepiscopal Throne or marble chair . . . and Beckett's Chapel'. I show the two iron screens now at the south-west porch and west door (plate XLIII). From the Dean's book, 1748:

ordered y^t the iron rails which now divide the body from the other parts of the Church be taken down and set up again in the two porches with as little alteration as need be.

¹ Woolnoth, *Graphical Illustration of Cathedral Church of Canterbury*, p. 58.

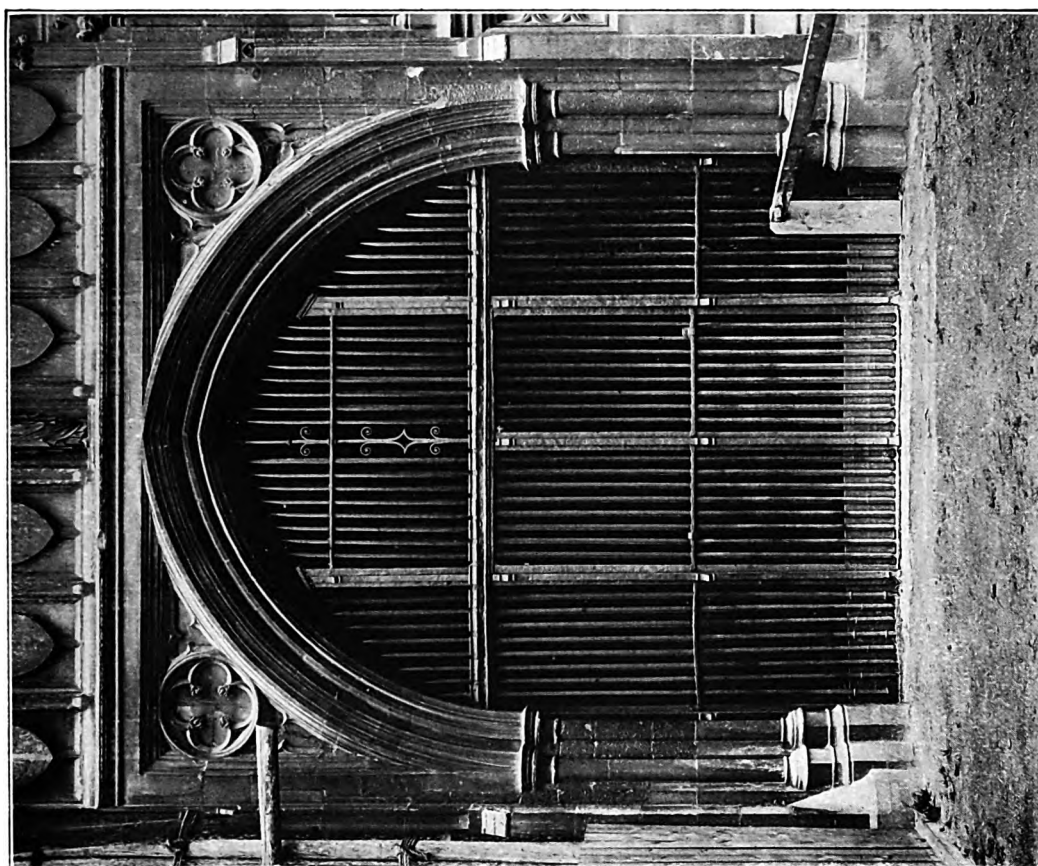
² Gostling, *A Walk in Canterbury*, p. 261.

³ Somner, *Antiquities of Canterbury*, 1st ed., 1640, p. 171.



IRON SCREEN NOW IN SOUTH-WEST PORCH

Phot. J. Charlton



IRON SCREEN NOW IN WEST ENTRANCE

Phot. J. Charlton

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The alterations and adaptations executed in 1748 are clearly to be seen, and this entry accounts for the curious blending of the Gothic with the classic iron-work: both simple and good of their kind.

I pass now to a more difficult subject, the altar. Prior Chillenden is recorded in the Kalendar of Obits to have ornamented the high altar and the altars of St. Dunstan and St. Elphege. 'Majus vero altare cum duobus altaribus sanctorum Dunstani et Elphege opere argenteo aureo ac ligno subtiliter inciso decenter ornavit.' In a list of repair works by Chillenden we find 'the new Altar' coupled with those of St. Dunstan and St. Elphege, and a 'table' of silver and gilt. John Buckingham, Bishop of Lincoln, left £20 for building the high altar, and Richard II gave £1,000, part of which was 'ad fabricam summi altaris'. Leland refers to the 'Altar Waul', while the existence before the depredations of the Commonwealth of 'a goodly skreene of Tabernacle work' is amply recorded by writers of that period. There seems sufficient evidence to conclude that we owe to Chillenden the general arrangements of the high altar and reredos, which Mr. Hope suggests was 'a low wall like that still standing at Westminster Abbey, extending across the presbytery and enriched with tabernacle work and imagery on both sides'. On both sides of the altar would be doors leading to the space behind. This screen or wall survived the inroads of Henry VIII, although it met with vicissitudes which Laud endeavoured to repair by means of various furnishings. Richard Culmer, *alias* Blue Dick the iconoclast, is eloquent on this head. 'At the East end they (the Dean and Chapter) have placed an Altar as they call it dressed after the Romish fashion, for which Altar they have lately provided a most idolatrous costly glory cloth or back cloth.'

Colonel Sandys, however, in 1642, fifteen years before Johnson dated his picture, brought all this to an end in a summary manner with the aid of his troopers.

Blue Dick's¹ *Cathedral Newes* tells us further: 'They hewed the Altar rails in pieces and threw the Altar over and over down the three Altar steps and left it lying with the heels upwards.' The sub-dean, Dr. Paske, writes: 'They defaced the goodly skreene of Tabernacle work . . . they further exercised their malice upon the arras hangings in the Quire, representing the whole story of our Saviour.' And, describing their losses after the Restoration, the Dean and Chapter refer to 'the Communion Table robbed of the skreene of Tabernacle worke, richly overlaid with gold behind it'. It is pleasant to notice that the abrasions of the step caused by the traffic passing through the screen doors are clearly shown by Johnson, and he also gives some indication of the position of

¹ Rd. Culmer, *Cathedral Newes*, 1644.

the altar and St. Dunstan's shrine. But no indication whatever is given of the screen itself or any part of it.

Now Thomas Turner being dean, we have the agreement made by the Dean and Chapter in 1664 (stated to be 'the seaventeenth year of King Charles II') with Peter Christopher Hartover of Deptford, painter, who covenants

to make frame erect and sett upp with additions of joyned and carved worke to be wrought and done in wainscott as are now in any part thereof wanting to the full compleateing and perfecting of the screene now standing and beeing upon the assent at the East end of the Quire of the sd Church—according to the forme, modell or designe thereof by him already taken downe and delivered to the sd Deene and Chapter. And the same additions and parts as now wanting being first so made fitted and erected, the same and all the rest or other partes already made and finished of the screene shall and will in and after the best and most workmanlike manner paint, colour, gild and embellish in all points and respects answerable and according to the forme, modell and designe.

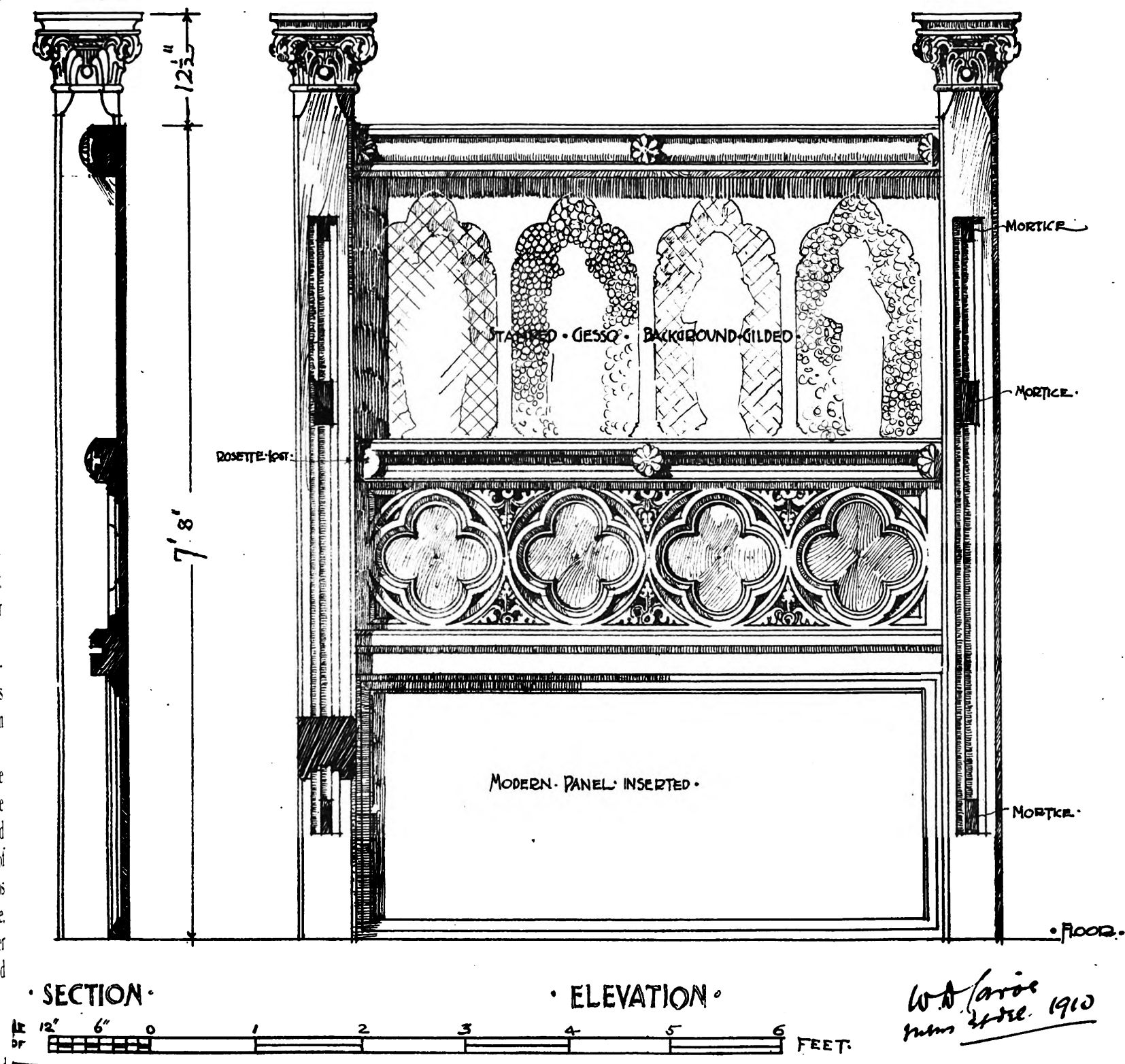
Hartover further undertakes to supply the want of the present altar cloth or front of purple velvet and crimson damask now used, and to paint the rail now standing before the ascent to the high altar, putting in the same with a stone colour laid in oils. For this work he is to receive £120, whereof £30 appears already to have been paid him for work done before the agreement, and there is an interesting proviso, which may be quoted: 'That by the judgment of artists and such as shall have skill to judge thereof it shall appear that the sd P. C. Hartover or his assigns shall have fully performed his and their bargain.'

It is not quite easy to understand this document. Something was standing by way of screen when this agreement was made, and whatever it was it was of wood. Was it any part of Chillenden's altar-piece, or was it some erection of Hartover's for which he had already been paid £30?

Now it is somewhat curious that most of the workmen employed in these works of refurnishing the cathedral came from the Thames' banks, where doubtless they learnt their trade in embellishing the warships of the day, and it is most unlikely that Hartover would have been skilled in tabernacle work of Chillenden's conception. I cannot but think that Hartover had erected, perhaps immediately after the Restoration, a small reredos, perhaps only a retable, costing £30, the inadequacy of which at once became apparent, when the further sum of £90 was spent upon it. The words 'other partes already made and finished of the screene' point to this.

In 1694 Thos. Lingall, joiner, does some work to the altar:

For a new canopy and two new pillars to bear it and two brasses behind the work and stuff 14s. 6d.



OAK FRAMING NOW AT ADISHAM

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The canopy and pillars duly appear in Cole's *View* (c. 1716) (plate XLI), but it is difficult to understand how they could have been erected for the sum named.

Mr. Woodruff, the cathedral sub-librarian, throws doubts upon the accuracy of Johnson's drawing, arguing that the agreement I have quoted points to considerable parts of Chillenden's altar-screen having survived the iconoclastic period. My own view agrees with Mr. Hope's, that this screen was of stone in the usual manner. Mr. Woodruff thinks it was of wood. Wooden altar-screens were certainly used in the cathedral. There is a fragment of a remarkable thirteenth-century wooden screen which Archdeacon Battely, brother of the historian, is said to have removed from an unknown place in the cathedral to furnish the altar of the fine church of Adisham, where he was rector from 1684 to 1708. It now stands in the south transept of that church, and is of course long antecedent to Chillenden (plate XLIV).

Furthermore, Mr. Woodruff relies upon the *Kalendar of Obits*, already quoted, 'ac ligno subtiliter inciso decenter ornavit,' and further, in relation to the altar of St. John Baptist, 'opere ligneo strenue decoravit.' But carved wood ornamenting the altars is no proof that the screen was of wood.

Battely¹ refers to what he says 'has been lately done in our days':

The most illustrious Queen Mary II of ever blessed memory who honoured this Church with her Royal presence provided the Altar as also the Archbishop's throne, the Stalls of the Dean and Vice Dean and the Pulpit of this Church with new and rich furniture.

Now this has frequently been read that she erected the altar-screen, for which there is no warrant at all. It might as well be said that she provided the stalls of the dean and the vice-dean, which we know were erected seven years before she came to the throne.

It is quite clear that Cole's drawing of 1716 (plate XLI) is correct as to the screen, because it appears again in Woolnoth in 1815 in like form, as seen from the back (plate XLV). I take the screen as thus shown by Cole in Dart to be Hartover's, possibly with Lingall's canopy added. We have no record whatever of Hartover's screen having been replaced by another before 1716. There is nothing in this even reminiscent of Chillenden, but it certainly possesses some spurious Gothic leanings, which were good enough for Gostling² in 1774. 'Opposite to the stone chair,' he says, 'we see the old Altar piece, now the lining of that to which it gave place in the year 1730. It is handsomely adorned

¹ *Antiquities of Canterbury*.

² *A Walk in Canterbury*, 1st ed.

with painting and gilding, and of a design which some think more suitable to a Gothic Cathedral than the new one.'

In 1732-3 what I believe to be Hartover's altar-piece was moved back to make way for this new one, to which it did accordingly form the lining.

From the Treasurer's Accounts:

1733. To the carpenter for work done to the frame, to set the old Altar piece on, and for putting up the old Altar piece, for 47 yards of wainscott done at the old Altar piece @ 2/6 per yard. £5 17s. 6d.

The contracts (which are extant) for the new altar-piece and for the wainscoting on the north and south sides of the choir from the eastern crossing to the altar-screen were entered into on June 24, 1731, Elias Sydall being dean; but the work was not completed till 1733. The design was by James Burrough, who became Master of Caius College, Cambridge, in 1754, well known as an amateur architect of the period (1691-1764). The joiner was John Balshaw, the carver John Bosun, both of Greenwich. The cost amounted to:

Joiner ...	...	...	...	...	...	£602	0	0
Carver ...	...	...	...	...	...	279	0	0
Gilder ...	...	...	...	...	...	13	3	0
Total						£894	3	0

What the amateur architect was paid does not appear.

In the view (plate XLV), the backs of both altar-pieces are shown. They were destroyed by Austin in about 1825, when the present piece of spurious Gothic synchronized with the falsification of the mediaeval scheme for this part of the church. This, which had survived with dignity all the changes and chances of Reformation, Renaissance, and Revolution, had to succumb at last to the milk and water of restoration, and all the indignity and inanity attaching thereto. The altar was elevated to the top of the ascent, where it has no business to be. The patriarchal chair had been dethroned somewhat earlier. The disposition of the steps was also altered for the worse.

It appears from Cole's drawing (plate XLI) that a black-and-white marble floor was laid over the old one when the classical stalls were introduced. The black-and-white marble pavement within the altar-rails was the gift of the widow of Dr. Thomas Nixon, 1729.



VIEW FROM BECKETT'S CROWN, 1816

From sketch by H. S. Storer

Published by the Society of Antiquaries of London, 1911

No. 2. (PLATE XLVI.)

I pass now to the larger drawing, no. 2, which is the work of a painter aiming at effects of chiaroscuro rather than architectural accuracy.

In regard to his picture Dr. Mason writes to me :

I can ascertain nothing with regard to its history. I bought it from a man at Sudbury in Suffolk, to whose uncle it had been given in part payment of a debt, but he could not tell me who the debtor was nor how he came by it.

The picture evidently had the name of Pieter Neeffs upon it before it came into the possession of the man at Sudbury. Experts to whom I have shown it say that it cannot be by Pieter Neeffs, but I am not sure what the ground of their opinion is. Certainly it cannot be by the earlier of the two painters of that name. For one thing he is not known ever to have been in England. For another he died before the date which the picture represents. It represents a state of things somewhat later than yours. Above the old stalls panelling has been put against Eastry's screen, but not the panelling pictured in Dart and still (in part) preserved. An altar-piece has been erected, but not Queen Mary's. The picture cannot have been coloured on the spot though drawn there : the pattern of the floor is correctly drawn, but the floor was never laid in black and white. In agreement with yours, it shows that there was no mediaeval screen behind the altar. It shows, like yours, a screen across the south aisle.

Now the wainscot covering the arcade western responds, which was projected in 1682, is not shown, and it seems therefore that the drawing, at any rate, was made before that wainscot was executed. For certain reasons the picture is of doubtful accuracy as to details.

The organ is inaccurately drawn, but it is in the right place. The stalls are correct, but the panelling over them bears only a general resemblance to that of 1676 which it is obviously intended to represent.¹ The pavement is correctly drawn but wrongly coloured, as Canon Mason notes, and so on ; and of the gilded altar-piece and balustered altar-rails this picture is the only representation we have, to my knowledge, and I believe these features to be wholly imaginary, excepting perhaps the gilding.

Unfortunately, what might have been a test of the painter's accuracy just fails us. A gilded sun, with the sacred monogram in the centre, supported by three carved and gilded cherubs with expanded wings, was probably erected by Dean Turner, who was succeeded by Dean Tillotson in 1672. It was removed by Tillotson in 1680. Censured for the removal, Tillotson pleads 'we only took down the sun over the screen behind the Communion Table . . . nothing done besides, not so much as the table stirred out of its place'.

¹ If this be a correct surmise then the picture was painted between 1676 and 1682.

The sun went down to Henry IV's chantry, where it lay in 1799, when Hasted wrote his *History of Kent*. It does not occur in the larger painting, but if this was painted between 1680 and 1682 or 1683, we cannot on this score deny the picture's accuracy. If painted before 1680 the sun ought to have appeared.

The brass eagle, correctly given, dates from 1663, and was made by William Burroughs of London, who is not to be confounded with James Burrough, the Master of Caius College. Incidentally we have a third Mr. Burows referred to in 1694:

For an eight light window delivered to Mr. Burows glassed by the Treasurer's order 10/-.

It may be noted that the lower part of the iron screen behind the altar-piece is shown in twisted leafage, which is probably incorrect.

The choir panelling is shown without its upper panels, and the bracketing of the cornice differs. The pilasters are also omitted. I think we have in this and other matters a mere painter's licence. Similarly as to the wall-painting on the north wall, its existence is confirmed, but the painter has translated it into large figures of a man and woman. He has classicized the semi-Romanesque capitals, and built the piers in large equal blocks. As already said, the same disregard of technical perspective occurs as in Johnson. The organ, the contract and receipts for payments for the erection of which exist, is represented in the proper place. The builder was Launcelott Peace of Cambridge, and the date July 17, 1662. The choir organ was to be erected by Christmas, 1662, and the great organ by or before the like feast then next following. The cost was to be £600, with the existing organ thrown in. The total payment in nineteen instalments was £666, the final quittance dated July 1, 1664. Now this organ is to be 'sett up in the organ loft now standing in or by the Quire of the said Church'. Subsequently we find a reference to 'the present organ standing in the organ loft aforesaid', which is 'not to be taken downe untile the new one shall be ready and fitt to be set up in the roome thereof'.

Will Jordan, a joiner, employed directly by the Dean and Chapter, assisted Peace in the work. We have several of his accounts:

June 2nd, 1663. The Joyner's bill for works done and stuff about the organ. For eleaven yards of wainscott wrought on both sides at eleven shillings and sixpence the yard, £4 6s. 6d.

For carving of foure freazes about the wainscott at sixteen shillings a peece, £3 4s. 0d.

For carving of sixteen foote of water crease and beads at eightpence a foot, 10s. 8d.

And in November 21st, 1663—carving the cross somer tree to beare the great sound board in the organ loft 2/6, and for striking the scaffold over the organ loft.

Now it has been assumed that the old organ was not wholly destroyed. Yet in the paper drawn up by the Dean and Chapter in 1660, describing their losses and needs, we read of 'The Quire stripped and robbed of her organ and organ loft'. Also they propose 'to carry on the work of perfecting the furniture of our Quire with an organ'.

It seems clear, then, that the organ-loft was erected very soon after 1660, and probably what was saved of the old organ reinstated for immediate needs until a complete instrument could be arranged for.

Our picture depicts the great organ front fairly accurately, but omits altogether the front of the *positif*, which is clearly given by Dart in Cole's drawing (plate XLI). It is quite possible, however, that this was a subsequent enlargement, though I can find no record of this. It would generally have contained the choir organ, erected, as we have seen, before the great organ.

It is possible to compare with these two views 'the modell scheme or figure' of the organ by Peace 'himself to the Dean and Chapter presented'. This is preserved to us in a rough draft on parchment, signed George Woodroffe (plate XLVII). Peace undertook to 'paint and gild the whole front thereof by and with the advice of artists or other judicious persons'. The executed work seems to have been more restrained and refined than this drawing would lead us to expect.

The organ-loft shown in the picture seems of the same design as that shown by Cole, although decorated by swags in the panels. The painter has raised the loft considerably above the screen work, and on the whole the two drawings can hardly be reconciled.

The earlier notices of the organs are as follows:

1540. 'In the Quire ij peire of organs.'

1584. 'In the chore A lyttle paire of orgaynes & a great' paire aboue.'

1634. 'A great organ in the quire.'

In 1635 the Lieutenant from Norwich heard 'the fayre organ, sweet and tunable'. Culmer¹ tells us that 'the zealous troopers began to play the tune of the zealous souldier on the organs or case of whistles which never were in tune since', which Dr. Paske, already quoted, confirms (1642) by stating that Colonel Sandys with his troops 'spoiled the organs'.

It may be mentioned that the remains of a small portable organ of Elizabethan date and charmingly designed existed until quite recently in a very dilapidated condition in the loft over the treasury. It has now been placed in the Library.

¹ *Cathedral Newes*, 1644, p. 19.

The general conclusion must be, that while of much interest and as a piece of effective painting greatly superior to Johnson, our second picture must have been painted away from the church, and the artist has filled in from his imagination some of the features of which he had not made careful notes, or has added others to suit his taste.

I have to express my indebtedness to Mr. Hope, Mr. Woodruff, and other helpers for assistance in putting together these notes.



PEACE'S DESIGN FOR THE ORGAN FRONT
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XVI.—*Exchequer Tallies*. By HILARY JENKINSON, Esq., B.A., F.S.A.

Read 26th January, 1911.

THE hoard of several hundred thirteenth-century Exchequer tallies, here brought to the notice of the Society, was found by the Office of Works during the recent repairs to the Chapel of the Pyx at Westminster, and transferred to the Public Record Office. A great deal of dust accompanied the tallies, and in this were found portions of some contemporary white leather bags of curious workmanship and a good many fragments of documents.¹ Some of these fragments were of widely different dates and classes, and it seems probable that the whole constituted a collection of the sweepings, as it were, of the many series which at different times found a home in that important repository of records.

The meaning of the word *tally* is sufficiently well known: starting with the idea of a stick notched for purposes of calculation, it early develops its full sense, used here—that of a stick notched and split through the notches, so that both parties to a transaction may have a part of the record. As Madox² says, ‘the origin of this was to prevent fraud’; but the device of the tally, split or unsplit, is so obvious and simple a one, and is found in so many parts of the world, that there seems to be no need to follow the suggestion put forward by Pollock and Maitland³ that the English tally is a rationalization of the Frankish *festuca*, the ceremonial wand or verge: this in spite of the undoubtedly Frankish origin of the constitution of the English king’s household, which is itself the origin of the Court of the King’s Exchequer. It may be added that the derivation usually given for the English *tally* and French *taille*—from the verb *tailler*, to cut—is incorrect. English Record Latin often spells the word *tallia*, but the proper form is *talea*; and this is good Latin for the slip inserted in a stock in grafting, and, further, for any long slip of wood. *Tailler* is derived from the verb *taliare*, itself probably derived from the substantive *talea*.

¹ e. g. some early Returns of Members of Parliament (*Eng. Hist. Rev.* April, 1910).

² Madox, *Hist. of the Exchequer*, ii. 258 (ed. 1769).

³ *Hist. of Eng. Law*, ii. 185.

The tally-stick, split or unsplit, is widely used: instances of it have been noted all over England and Europe, indeed all over the world, and in all kinds of trades. Illustrated here (plate XLVIII, fig. 1) are some tallies quite recently in use, no. 1 being an unsplit faggot-cutter's tally, and nos. 2, 3, and 4 split tallies from the Kentish hop-fields; and they are still in comparatively common use, to take only one instance, amongst bakers in France.

It would seem, however, that only England systematized the tally into an official instrument cut strictly according to certain rules—we have, as a nation, a genius for systematizing customary things: upon which account the writer inclines to refuse the theory that the official tally was a Norman importation. 'Tallies,' says Madox, 'were of great and constant use in the Exchequer, coeval for aught that I know with the Exchequer itself in England.' This is to speak rather loosely of the history of that office. Tallies, in some form, are undoubtedly older than the *Scaccarium*, the squared table-cloth, just as receipt is older than audit. 'What we now call the squared cloth of such-and-such a year,' says the *Dialogus*, 'was formerly called the Tallies of such-and-such a year.' It is not out of place to note here that the highly important, though somewhat neglected, *Receipt Roll* is, in origin, no more than a register of tallies issued: and the same form of words is invariably used in both. At the same time there is no doubt that the development of the tally into a highly organized instrument went with, and was conditioned by, the organization and growth of the Exchequer system.

Once discovered, it is not surprising that the use of the tally in its most perfected form should have been rapidly popularized. As a financial instrument and evidence it was at once adaptable, light in weight and small in size, easy to understand and practically incapable of fraud. Doubtless the 'profer' system, under which the sheriffs, the chief accounting officers, paid in at Easter sums on an account which was not audited till Michaelmas, gave additional popularity to this handy and durable form of receipt: and the process could be continued lower down the scale in private tallies between the sheriff and minor accountants. At any rate, by the time that the *Dialogus de Scaccario*¹ was written, that is to say by the middle of the twelfth century, there was a well-organized and well-understood system of tally cutting at the Exchequer. So far as form was concerned, there was now very little to be added, and the conventions remained unaltered and in continuous use from that time down to the nineteenth century. By statute of 23 George III (1783) the use of tallies was abolished, an indented cheque receipt being substituted for them (there is little doubt, by the way, that the form of the

¹ The edition quoted here is that of Hughes, Crump, and Johnson.

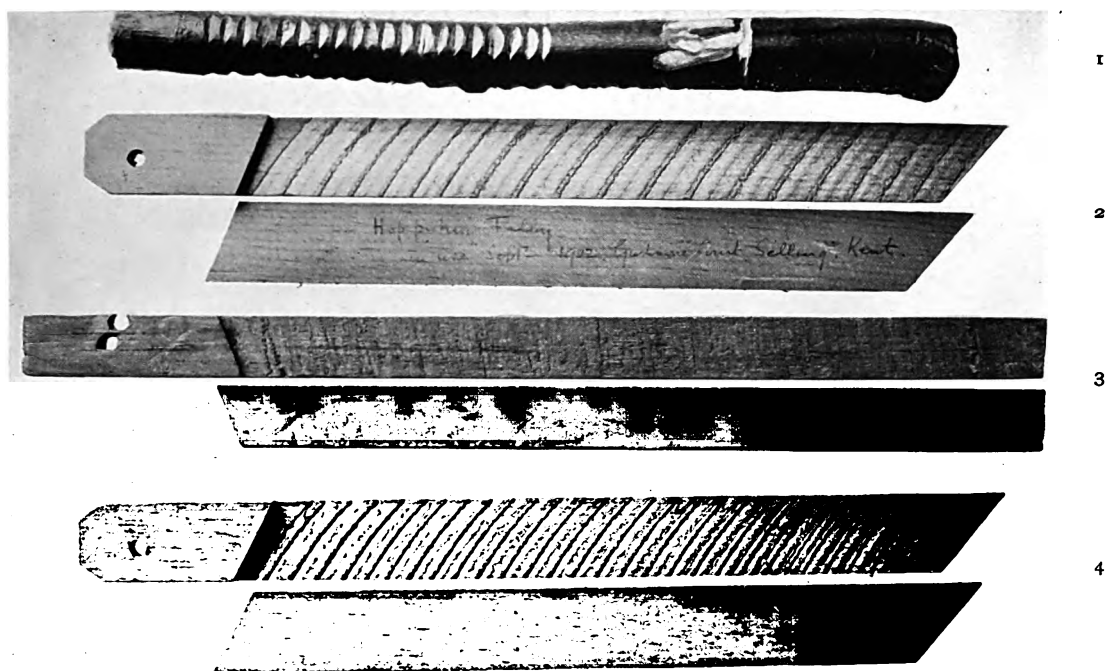


Fig. 1. Modern Private Tallies. $\frac{2}{3}$

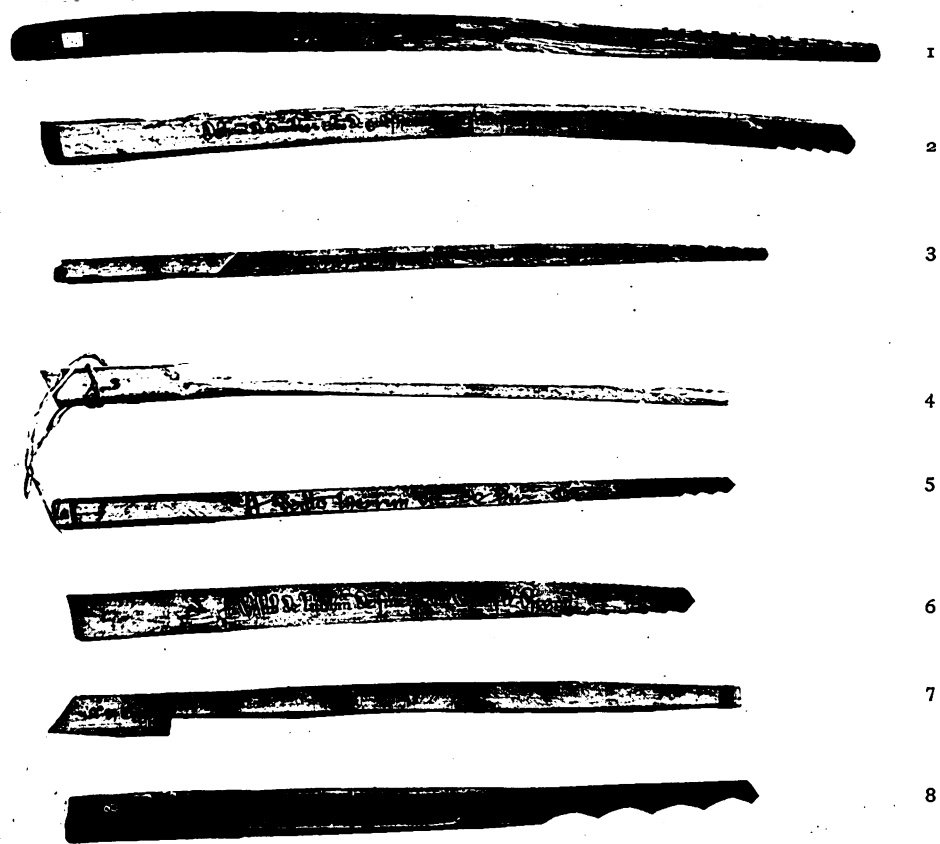


Fig. 2. Exchequer Tallies, thirteenth century. $\frac{1}{2}$

indenture was copied from that of the tally¹): but this statute was not to take effect till 'the death or surrender of the then two chamberlains', and tallies continued to be cut till October, 1826. After the further statute of 4 and 5 William IV the destruction of the official collection of old tallies was ordered, and according to the well-known story the imprudent zeal with which this order was carried out caused the fire which destroyed the Houses of Parliament in 1834. So that tallies perished gloriously.

We must not omit to mention that the *Dialogus* shows us an establishment of offices connected with the tally as complete in its way as the conventions of tally cutting; and the historical descent of both to modern times is almost equally regular. Thus reference has been made to the chamberlains whose life prolonged the life of the tally; and from the earliest times of which we have knowledge the lower Exchequer or Exchequer of receipt—the Exchequer of tallies, as it might almost be called—was presided over by the chamberlains or their deputies in concert with the treasurer: the treasurer, being a clerk, had particular control over the rolls of receipt; the chamberlains, as laymen, over the cutting of the original receipts or tallies. And, to take another instance, the usher of the Exchequer was still supplying the material for the Exchequer tallies at the time of their abolition,² just as his predecessor was doing (for the sum of five shillings a year) at the time of the *Dialogus*.³

The purpose of this article is to deal principally with the method of cutting Exchequer tallies: it is not intended to treat of the many uses to which they were put between 1150 and 1820; though these ought to figure more largely than they have hitherto done in any history of English currency or finance. It must, however, call attention to one matter which is not a matter of form, one change which came over their usage, because on this is based their whole claim to attention, apart from their sentimental interest, as things practically important in English history. This change, which has been, in the past, undeservedly neglected by students, consists, to put it briefly, in the discovery that the tally of receipt might be used for purposes of issue. In conception it is purely a receipt, an original receipt, which, so far as Exchequer business was concerned, contained as a rule no information which could not be more conveniently obtained from the Receipt Rolls on which it was registered. But, obviously, if *A* owes *X* money and *X* owes *B* money, *X* can pay the creditor with a cheque on the debtor: let him make out a receipt to *A* and give it to *B*, and let *B* not part with it until he has obtained the money. If *X* is the Government it can easily

¹ It may be suggested that the tally convention is also responsible, among other things, for the term 'stocks' and for the cheque system.

² *i.e.* in 1783.

³ *Dialogus*, ed. cit. p. 65.

compel *B* thus to take upon him the trouble of collecting its debts, and much is no doubt gained by this simplification of public business. Three things result from this: (1) the tally, still in form a receipt, may and frequently does become in reality a cheque payable to bearer; (2) the registration of receipts at the Exchequer may be fictitious, or rather the double business of receipt and issue may be simplified into a single process; and (3) practically the whole business of the Exchequer may be transacted without money passing at all.

We cannot now give in detail the history of this remarkable and important financial development. It is clear, however, that a radical change was effected both in the form and in the spirit of the Exchequer's financial transactions with its accountants. They were simplified out of their primitive simplicity and direct personal payment upon the one side or the other often disappeared entirely: only the shape these transactions took, when they were reduced to records, was, with a typical conservatism, preserved unaltered—the old form of wording of the tally persisted and, as far as the fictitious receipts were concerned, so did that of the Receipt Roll.

The last words require some explanation. The tally of receipt was probably used on occasion for purposes of issue quite early in its history. There is at any rate an instance in the thirty-fifth year of Edward I, when William Trente, the king's butler, having occasion for money, was given a tally of receipt in the name of the citizens of London, who owed a large sum on account of aids and from whom he was to obtain the payment: it was thought necessary, however, on this occasion, to address a writ of explanation to the citizens.¹ About the year 1320 or very soon after, the practice of issuing money in this way was fully established; and about 1350 it became the custom to add at the side of the conventional entry on the Receipt Roll—*e.g. De . . . vicecomite de firma comitatus . . .*—either the word *sol'*, denoting that the sum had actually been paid into the Exchequer, or a note of the other transaction that had taken place, namely the issue of this sum by tally to some official or creditor of the crown. By way of illustration we may take, at hazard, a passage from the Receipt Roll of 1444,² the first entry under date July 11th (*Die Jovis xj^o die Julij*), which runs as follows:

Sussex. De Johanne Perpount et Johanne Yerman collectoribus customarum et subsidiorum domini Regis in portu ville Cicestrie vij libras de eisdem customis et subsidiis.

(Sussex. From John Perpount and John Yerman, collectors of the king's customs and subsidies in the port of the town of Chichester, £7 of the said customs and subsidies.)

¹ Madox, *op. cit.* p. 260.

² Exch. of Receipt, *Receipt Roll* (Pells), 563.

In the right-hand margin is added this note :—

pro domino de Bouchier per restitutionem vnus tallie videlicet xvij^o die Februarii anno xxiiij^o Regis nunc leuate per manus Ricardi Wode.

(for Lord Bouchier by return of one tally, to wit one levied on the 17th day of February in the 23rd year of the present king, by the hands of Richard Wode.)

Of course, John Perpount and John Yerman had never paid this sum into the Treasury: the case was simply that £7 was wanted *pro domino de Bouchier*. The ensuing entries for a considerable way down the Roll are of the same kind and accompanied by similar notes; and these notes are reproduced in the same order under the same date upon the Issue Roll. It will be seen from the entry just quoted that Lord Bouchier had had already some difficulty in obtaining his money. By way of illustration of this we may take a single case—that of the Florentine firm of merchants called the Peruchi—a hundred years earlier, in 1339. This firm had advanced £4,000 on the security of certain taxes and they received on account two tallies amounting to £700 upon the collectors of taxes in Northumberland. Fortunately they had themselves contracted two debts for 400 marks and 200 marks respectively with John de Eston in his capacity as Receiver for Queen Philippa and in his private capacity: they therefore were able to cast back the responsibility of collection upon that official.¹ Under such circumstances as these the Receipt Roll was really unnecessary. But of course this was an extreme case; it did not always happen that the Exchequer was so hard pressed for money.

The practice, then, of making issues by tallies of receipt continued in use with modifications up to the end of the seventeenth century: Pepys, for instance, is continually referring to payments at the Exchequer made to him by tally, to the inconvenience of the system, and to the slowness and unresponsiveness of the clerks who administered it. At this time the goldsmiths, who then carried on something like a banker's business, would discount tallies, and on one occasion the king caused a panic by stopping the Exchequer, *i.e.* declaring tallies void. The system of issue probably began to collapse at the beginning of the following century with the establishment of banks—in particular of the Bank of England—but the Receipt Rolls or Receipt Books and the tallies of receipt went on in their old form for a hundred years more.

To return to the subject of tally cutting proper. It may seem remarkable, and is an evidence of the completeness of the destruction in 1834, that an exact account of tally cutting should have been hard to obtain. There has been no lack of inquiry. The literature upon the subject may be divided into two classes: (1) the

¹ Exchequer, *L. T. R. Memoranda R.* 115, *Hil. Rec.* ro. 3.

Dialogus de Scaccario with one or two treatises which deal with the account there given; and (2) all the rest. Of the first of these the writer has to say something presently. The second consists of questions, answers, and descriptions, spread over all the ten collections of *Notes and Queries*,¹ and of casual references in various works, such as Beatson's *Political Index*, Chambers's *Book of Days*, and Stubbs's *Constitutional History*;² of an article in the *Illustrated London News* of 1858, which is copied, together with a rather difficult illustration there given, in Dr. Cunningham's *Growth of English Industry and Commerce*;³ of some remarks in Lord Avebury's book on coinage and currency, with a picture of a late private tally; of an undated and anonymous broadsheet, a copy of which is at Kew Gardens, apparently published soon after the fire and containing among other matter mention of two curious tallies, one being a receipt for money paid 'for conscience sake' and one a tally for one farthing;⁴ of the notes upon tallies shown before this society, for instance, an early private one shown by Mr. Baildon;⁵ of the recent paper of Mr. Norman before the Archaeological Institute⁶ upon some late Exchequer tallies found at Martin's Bank, some of which, by the kindness of the Bank, are illustrated here (plate LI, fig. 1); of the notes in Mr. Hall's *Antiquities of the Exchequer*; and of some remarks in an official report published by H. W. Chisholm in 1869,⁷ most of them borrowed from an appendix to the Deputy Keeper's fourth report.⁸ Some of these accounts contain a good deal of inaccuracy. The difficulty in the case of all such as dealt with the Exchequer tally—and only the Exchequer tally has a definitely fixed form—has been the same as that which affected those who commented on the passage from the *Dialogus*; in the words of the latest editors of that treatise, 'no tally that we have seen seems to be cut exactly in the way here described';⁹ this being because no collection of really early Exchequer tallies was available.

It remains to explain the rules upon which tally cutting was conducted. The passage in the *Dialogus* runs as follows:

Now as we have mentioned tallies consider briefly the fashion after which the making of them is ordered. There is one tally which is so called simply, another which we name a Memoranda Tally. Properly the length of a tally is from the tip of the index finger to the tip of the thumb extended. There [*i. e.* at one (the left) end] it is pierced with a small (*modico*) hole. The Memoranda Tally, which is always made for the farm that is

¹ None of these are of very great importance, except that referred to in note 4 below.

² Ed. 1896, vol. i, p. 410.

³ p. 157.

⁴ See *N. and Q.* ser. vi, vol. iv, p. 492.

⁵ *Proceedings*, vol. xv, p. 313.

⁶ *Archaeological Journal*, vol. 59, p. 288.

⁷ *Parl. Rep. on Public Income and Expenditure*, part ii, app. 13, p. 339.

⁸ App. ii, p. 166.

⁹ Ed. cit., p. 42.

to be blanced (*firma blanca*), is a little shorter because after the assay has been made by which the farm is blanced this first tally is broken and, by the addition of the length of the combustion tally, then first attains (*meretur*) the [proper] length of a tally.

The cutting is done thus. At the top (*in summo*) they put thousands of pounds in fashion so that the cut for it will take the thickness of the palm of the hand, 100*l.* the breadth of the thumb, 20*l.* that of the little finger; the cut for 1*l.* is of the thickness of a grain of ripe barley; for 1*s.* less, yet so that by the two converging cuts something is removed and a small notch made; a penny is marked by a single cut, nothing being removed. On the edge where a thousand is cut you shall put no other number save the half of a thousand, in fashion so that you remove the half of the cut, placing this lower [on the tally]. The same method is observed if you are to cut a hundred and there is no thousand; so also shall you do for 20*l.* or for 20*s.*, which we call a pound. If there are many thousands or hundreds or scores of pounds to be cut the same rule is observed, that on the more open side of the tally, that is to say the side which is immediately before you (*directe proponitur*) when the note has been made, the greater number, on the other side the smaller is to be inscribed. On the more open side the greater number is always at the top, on the less open the smaller number [that is the pence¹]. There is, at the Exchequer, no cut signifying specially (*sola significativa*) a mark of silver; it is denoted by shillings. A mark of gold you must cut in the middle of the tally like a pound. The gold penny you must not cut like the silver one, but with the cutter's knife put straight (*ducto directe*) through the middle of the tally, not obliquely (*obliquando*) as is done with the silver penny. Thus the disposition of their places and the difference of their cutting determines which is gold and which is silver.

But you will understand all this better by seeing than by being told.

It is perhaps not surprising that the *Discipulus* accepted this view and pressed for a resumption of other topics.

Before introducing examples to illustrate this passage, it would be well to add an explanation of one or two facts not mentioned by the author of the *Dialogus*.

(1) The form of wording used on the tally is invariable—it is the same as that used in the Receipt Roll or, in the eighteenth and nineteenth centuries, the Receipt Book.²

(2) The Exchequer tally was usually made of hazel: willow and other woods are mentioned by authorities, but the writer has seen no examples, ancient or modern.

¹ This is probably a gloss, though the information conveyed is correct. See note on plate XLIX (2), below p. 377.

² The very name of the early Receipt *Roll* (of parchment)—*Pellis Recepte*—is perpetuated in the nineteenth-century Receipt *Book* (of paper). Both tallies and the Records of the Exchequer of Receipt are remarkable, even among English archives, for their preservation of old conventions. See, below (p. 377), the remarks on plate L (2).

(3) The angles of cutting at both ends and in the half-way cut¹ follow an unvarying rule.

(4) The two parts of the tally had names: the larger was normally called the stock (*stipes*), the smaller the foil (*folium*): the stock went with the payer, the accountant; the Exchequer kept the foil. Apparently when the account was finally made up the stock was returned to the Exchequer. Curiously, all those found are stocks. The stock is also called sometimes the *chacia* or the *scacchia*, and the foil sometimes *contratallia*, the counter tally. The description of the *Dialogus* applies throughout to the tally proper, given to the accountant—the stock.

(5) The *Dialogus* makes no mention of any provision against either fraud or accident. The former was obviously hopeless if the Exchequer did its duty, but we have cases where it was attempted: for instance, in 1297 William de Brochese, being entrusted by the sheriff with 60s. in cash and a tally showing 5 marks already paid in, to be taken to the Exchequer, added the 60s. to the notches on the tally and kept the cash, he was discovered, and sentenced to go to prison for a year and a day.² Again, we have an instance of the same period where a piece representing 4*d.* was broken off a counterfoil at the Exchequer: it was decided that it must be mended.³ Losses were not uncommon—we have one instance where a tally was lost twice—and after a time it was decreed, by a statute of 14 Edward I, that on such occasions the tally should be, with due formality, renewed, and the matter entered on a roll.⁴ These rolls continued to be kept at least as late as the end of the seventeenth century.⁵

(6) Other points with regard to tallies were regulated during the reign of Edward I, which seems to have been as formative in this as in more important matters. There was, for instance, the Statute of Rhuddlan, in 12 Edward I, dealing with the conduct of Exchequer matters between the sheriff and minor accountants, and in the Year Book for 20 and 21 Edward I⁶ is to be noticed an important case touching the legal value and admissibility of the tally. More important than these for our present purpose are two changes illustrated in plate XLVIII, fig. 2. To begin with, the tally had no indication either of date or of the locality concerned. In this it is naturally paralleled by the Receipt Roll (itself,

¹ *i.e.* the cut (an English characteristic) half through the tally: this cut arrests the progress of the longitudinal slit when the latter has traversed about two-thirds of the tally, as may be seen in the illustrations.

² Madox, *loc. cit.*

³ *Ibid.*

⁴ *Ibid.*: Ryley, *Placita Parliamentaria*, p. 450.

⁵ They are the *Tallie Innovate Rolls* of the department of the Exchequer of Receipt.

⁶ *Year Books*, Rolls Series, 20 and 21 Edward I, p. 68.

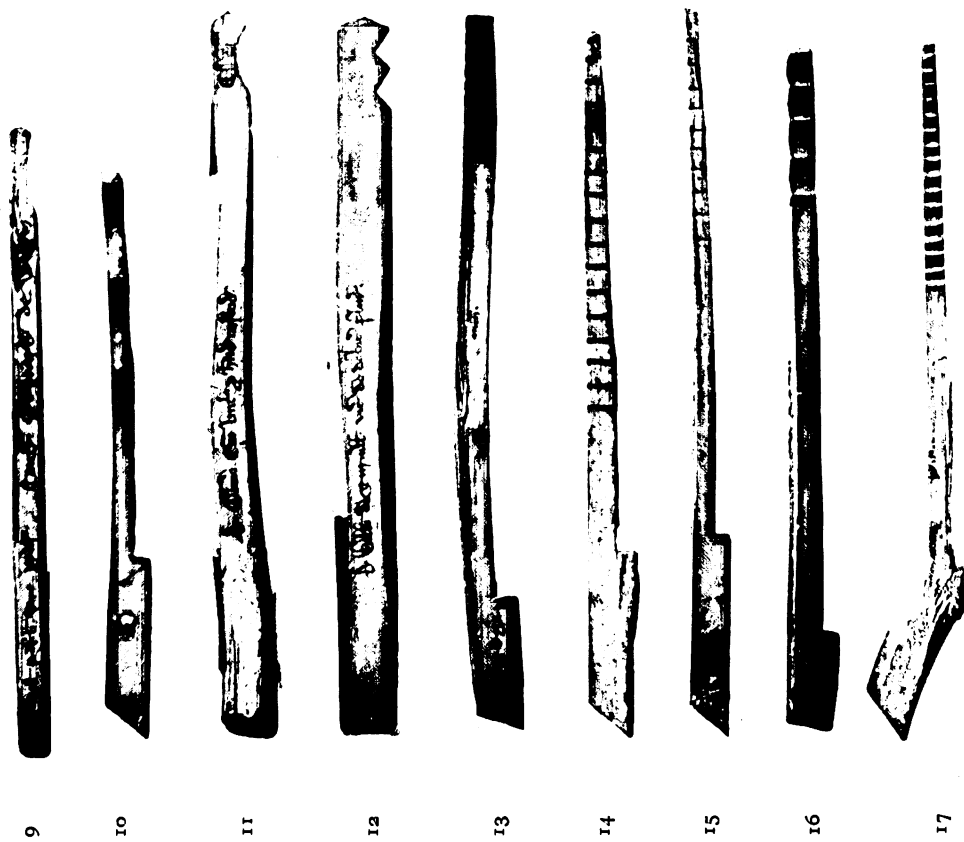


Fig. 1

Exchequer Tallies, thirteenth century. About $\frac{1}{2}$

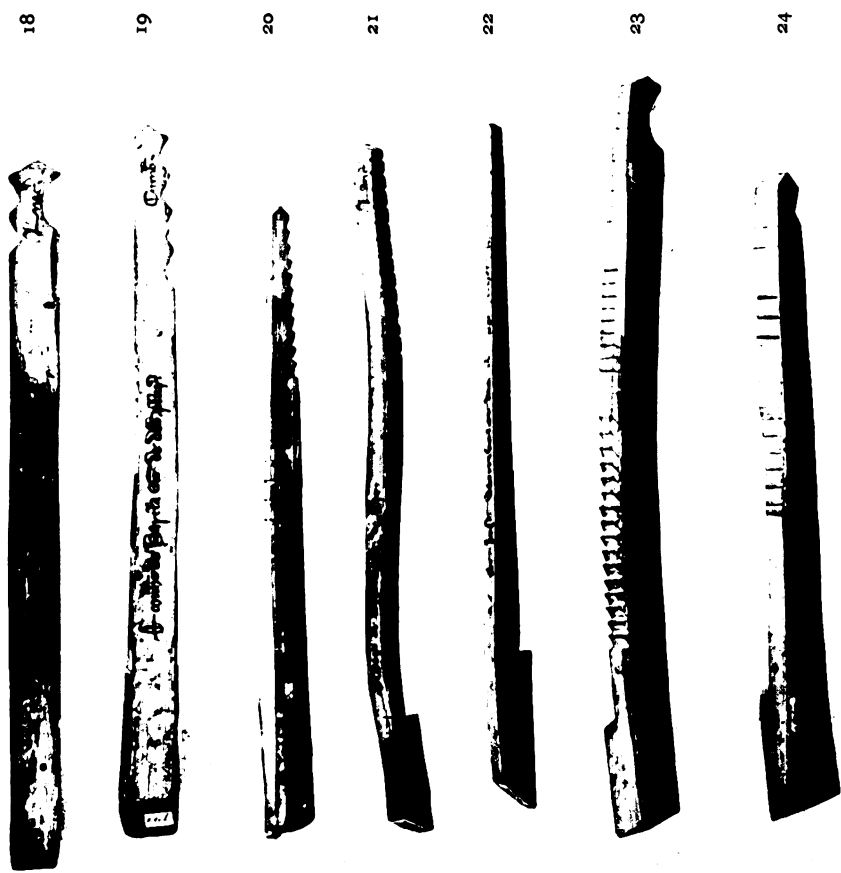


Fig. 2

as stated above, in essence no more than a register of tallies), which begins by being, in the early part of the reign of Henry III, a mere collection of entries of receipts, several columns to a membrane, grouped, it is true, under general headings of counties, but having no indication of date. The tally naturally could not come under a general heading, but gradually a Receipt Roll appeared in which the entries were made in one column according to the date of receipt, under which arrangement it was of course necessary to identify by a note the county of each entry as it was made: probably the county appeared on the tally (plate XLVIII, fig. 2, no. 5) when the newer finally ousted—early in the reign of Edward I—the older form of roll. The term and year were added (no. 7) according to a definite order made in the 19th year of Edward I by the Barons of the Exchequer.¹ But the writer has seen tallies with the year written in here before that date.

It remains to mention in this connexion the *pro* and *sol'* development to which reference has already been made, and which is also dealt with in the Deputy Keeper's report and in Chisholm's remarks. There can be little doubt that some time near to the earliest date at which the entry *sol'* occurs on the Receipt Roll saw also its first appearance on the tally; it was apparently written on the upper² of the two notched edges, on which portion it appears here. On the *pro* tally, the *pro* note was apparently written in the same place as that in which it occurred on the Roll, *i. e.* on the right-hand side; it was, unlike the *sol'*, on the same face as the annotation. *Pro* tallies are not common. The suggestion of the Deputy Keeper's report and Chisholm is apparently that an alteration of the whole wording was made, under which the receipt convention *De so-and-so . . .* would have disappeared. The writer has seen no instance of this, but he has seen an example where the *pro* note was *added*, as in the Receipt Roll, and believes, therefore, that this was the form used. At one time the tallies upon the Exchequer's debtors seem to have been issued not directly to the officials or others who required payments, but to intermediaries: this proceeding may have affected the form, but of this, again, there is no evidence.

It should be mentioned that plate L, fig. 1, and the illustrations of Chisholm and Cunningham represent the only foils of Exchequer tallies the writer has seen: if usage were as constant in this as in other particulars, it would seem that the writing on the foil was the opposite way up to that on the tally proper (the stock): this view is supported by an early tally, recently found, on which a portion that should have been split off has remained; on this side of the foil (as it should be)

¹ Enrolled on *Receipt Roll*, Pells, 73, m. 5.

² Upper, that is, with regard to the inscription on the stock or tally proper.

is a note of the date, immediately under the same note on the stock. Supposing the clerk to inscribe first the accountant's name on the face of the stock, and then, turning the tally over, to write both dates on the lower of the two notched sides (*i. e.* the lower side of the stock), he would then, turning once more in the same direction, write the duplicate of the first inscription on the face of the foil in this reverse way.¹

Coming now to the illustration of the *Dialogus* passage by our plates.

Plate XLVIII, fig. 2, besides the points mentioned, gives some idea of the length of the normal tally as described in the *Dialogus*. No. 4 shows the hole which is found in the thick part of most tally stocks, together with the thread used to tie the stocks together. This is not, probably, the *modico terebro* of the passage in the *Dialogus*: that hole is represented by the one seen at the left-hand end of the split part in no. 3; apparently before the split was made a hole was pierced—perhaps for gauging purposes—rather more than half-way through the whole piece of wood: the piece which, split off, became the foil was completely perforated, while the stock was left with the mark seen in this illustration. No. 8 shows, on the extreme right, the letters *btc* written, an indication that the amount notched on this tally had been blanced. Reference may here be made to the statement at the end of the first paragraph of our *Dialogus* passage: this seems to be, in fact, an example of the tally which has 'attained the proper length of a tally' after combustion of the amount originally paid in.²

Plate XLIX shows, in no. 9, an example of the rare *contra* tally. Possibly this solves the question how issues were made before the system arose of using ordinary receipt tallies for the purpose. While in the possession of the accountant to whom payment was to be made this tally, inscribed simply *contra Edwardum de Westmonasterio*, with a note of the date, constituted a cheque payable to bearer; given up at the Exchequer in exchange for cash it became a record of payment made. No. 10 shows two of the marks for £1,000 made, as the *Dialogus* says, *in summo*, at the top of the tally—in the case of the stock the right-hand end. No. 11 gives us the mark for £100: note that it is made (perhaps in order to distinguish it from the £1,000 mark) with a curve, not with two straight cuts forming an angle. No. 12 shows two of the marks for a score of pounds. No. 13 has ten £1 marks. No. 14 seventeen for one shilling. No. 15 eleven for one penny—marks made by a single cut which removes no wood. Note that the amounts on all these tallies are cut in the same place—the 'top'

¹ *i. e.* supposing the amount noted on the tally to be £11 11s. 11d., the £11 would appear on the lower side of the inscription on the stock, the 11s. 11d. on the upper. In the case of the foil the positions would be reversed, though the cuts would still be at the right-hand end of the inscription.

² See the Introduction to the *Dialogus* (ed. cit.), p. 28.

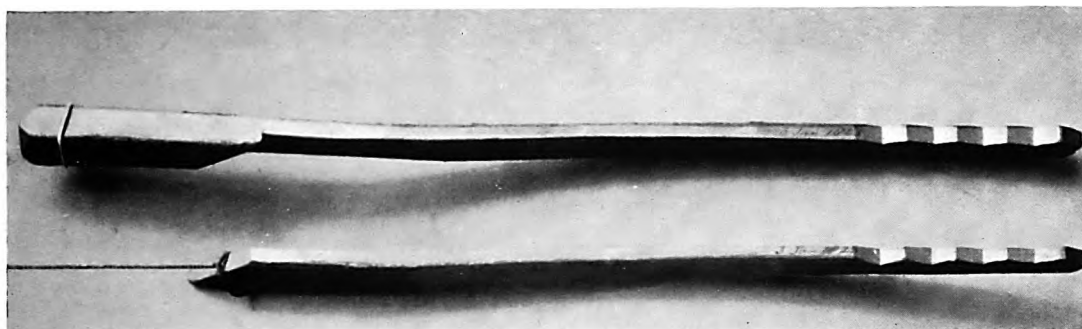


Fig. 1. Exchequer Tally: stock and foil; nineteenth century. About $\frac{1}{4}$

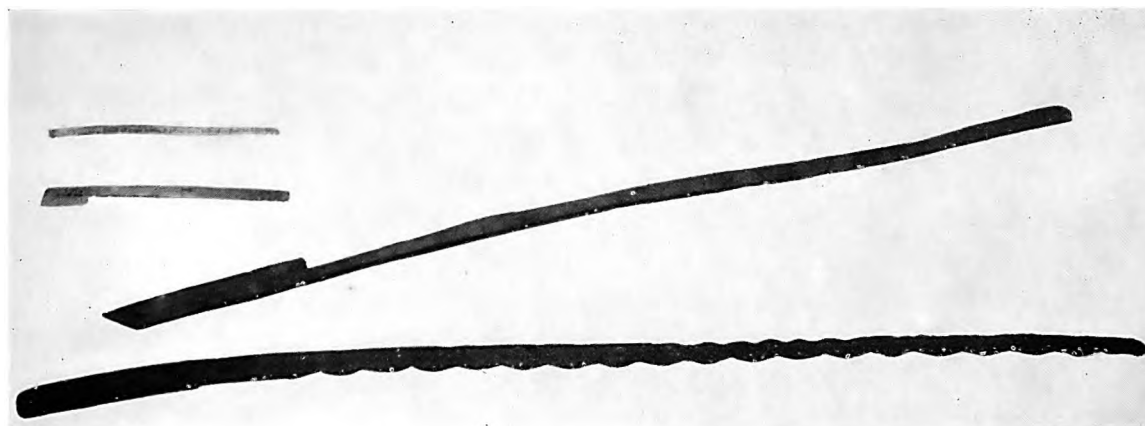


Fig. 2. Exchequer Tallies, thirteenth and nineteenth centuries. About $\frac{1}{8}$

end of the lower side—according to the rule given in our passage, because none of these tallies contains any amount of a higher denomination than those here mentioned. If, for instance, on no. 12 there had been £100 as well as the two score here seen, the £100 would have occupied the place of honour and the score marks would have gone to the upper edge. Nos. 16 and 17 show, on the left of the others, the half mark indicating respectively £10 and ten shillings. No. 16 has four and a half score pounds, no. 17 sixteen and a half pounds.

Nos. 18 to 24 f, Plate XLIX, show the arrangements made when more than one kind of cut appears on a single tally. 'On the more open side,' says the *Dialogus*, meaning the side nearest to any one holding and reading the stock, 'the greater number is always at the top: on the less open the smaller number'; to which a later writer has added what is probably a gloss, 'that is the pence.' The fact is that this place is usually reserved for the pence: even if there are none the shillings or pounds are kept further to the left as in no. 19, which has four score pounds below and £5, with no shillings or pence, above. No. 18, with its scores immediately over the £100, is an exception. No. 20 shows a normal arrangement of (eleven) pounds, (five) shillings and (eight) pence, no. 21 a like proceeding with regard to (thirteen) shillings and (four) pence: the amount shown in this last (a mark) is, either by itself or in a multiple, very common. No. 22 shows the pennies on the 'more open side', and nos. 23 and 24 are interesting for the lengthy sums shown—£116 (£100 below and £16 above) 9s. and 8d., and £26 13s. 4d. (below £20 and above £6½, 3s., and 4d.) respectively.

The writer has found in the tallies he has handled no sign of the methods described by the *Dialogus* as proper to the marking of a gold mark or the gold penny. There would indeed be little necessity for this, England having no gold coin of her own for a considerable time after this passage was written, and other cutting arrangements proving sufficient throughout the life of tallies for the amount it was desired to mark on them.

Plate L, fig. 1, is the example of a perfect, though late, tally and foil already referred to.

Plate L, fig. 2. We have here two late Exchequer tallies, from a collection in the Public Record Office, together with two of the thirteenth century for purposes of comparison. It will be seen that the later examples are almost exactly similar to those of the thirteenth century. They are of hazel wood; they have the characteristic angles of cutting at the bottom and at the half cut and the characteristic top. The inscription runs: *De S. R. Lushington et Geo. Harrison armigeris pro proficuis pretii extraordinarii super billas de scaccario venditas pro publico in mensibus Septembris, Octobris et Novembris 1817*. They have *Magna Britannia*—replacing the old *Anglia*—as a sign that the account was not a purely local or county affair

—in the proper place at the top of the tally, and the date of entry—April, 1817—in the proper place on another side: and just as the transaction recorded on an early tally is entered in the same words in the Receipt Roll, so this entry occurs in the same words in the Receipt Book—the direct descendant of the Receipt Roll. The cutting is made according to the old rules as far as position is concerned. The notches of the shillings have slightly and the other notches very slightly broadened. Chisholm, who had an official connexion with the department which used to produce tallies, alludes to a standard measurement of these by inches and parts of an inch. He alludes also to a round hole indicating a half-penny (it is difficult to see how this could have been divided in the notching), but not to the written farthing: he says nothing about the placing of the notches. He states that the length was limited to 5 feet: and apparently it was not usual to cut more than £25,000 on one tally. The enormously increased length was a fairly early development, due a little perhaps to the greater length of the annotation and the increased size of writing, but mainly to the greater number of thousands the tally cutter might be required to put in. The writer has seen parts of a tally of the reign of Charles II which must have been quite 2 feet long, and has a reference to an Elizabethan one measuring $16\frac{1}{2}$ inches. By Queen Anne's time—represented here by the tallies kindly lent by Martin's Bank (plate LI, fig. 1)—a rather long tally was quite unnecessarily used for comparatively small amounts.

Plate LI, fig. 2. The first seven tallies on this plate are shown rather for the interest of their inscriptions than for the fashion of their cutting. The first six record receipts from Jews 'of the tallage of 20,000 marks': the Jews have added or caused to be added writing in their own script. Generally this is merely a repetition of the name already inscribed in Latin; but on one there appears, besides the name of the owner (Delacriss), the words 'mimattenath yesrim eleph' (of the gift of 20,000), again a repetition of the ordinary inscription but going further than the others.

The seventh tally is of interest as bearing the inscription *De Johanne de Abernun de proficuo Comitatus*. This is the Sir John d'Abernon whose brass, the oldest in England, is at Stoke d'Abernon.

Included in this plate are four small private tallies by way of comparison. They are interesting for their curious shapes and sizes and their early date. And, though it is not quite relevant to our subject, we may perhaps conclude with a note on the subject of early private tallies. The present four are from an original file of fourteen to which is attached a schedule noting that they belong to the last four years of the reign of Edward I and relate to prises of wine made for his son the Prince of Wales.

Subject to correction the writer would make the following remarks upon

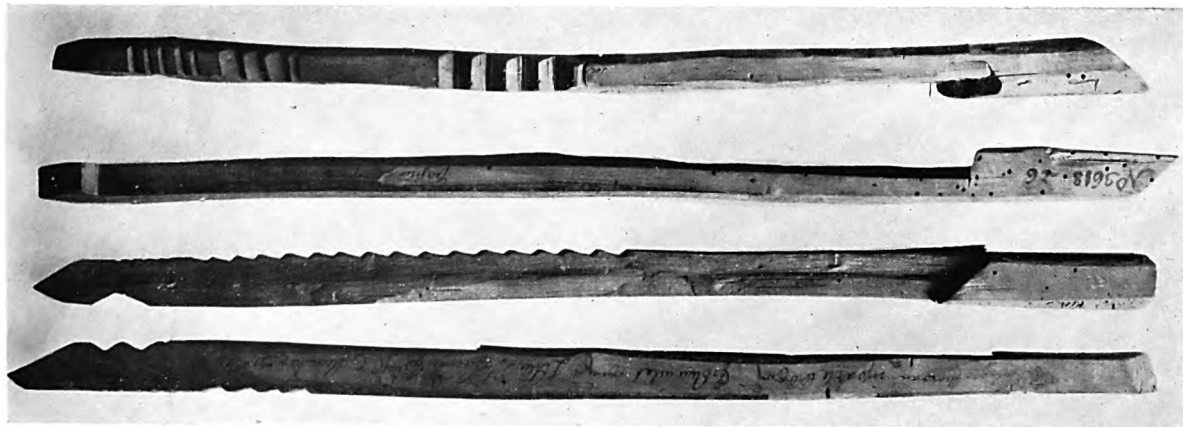


Fig. 1. Exchequer Tallies, eighteenth century.
About $\frac{1}{3}$

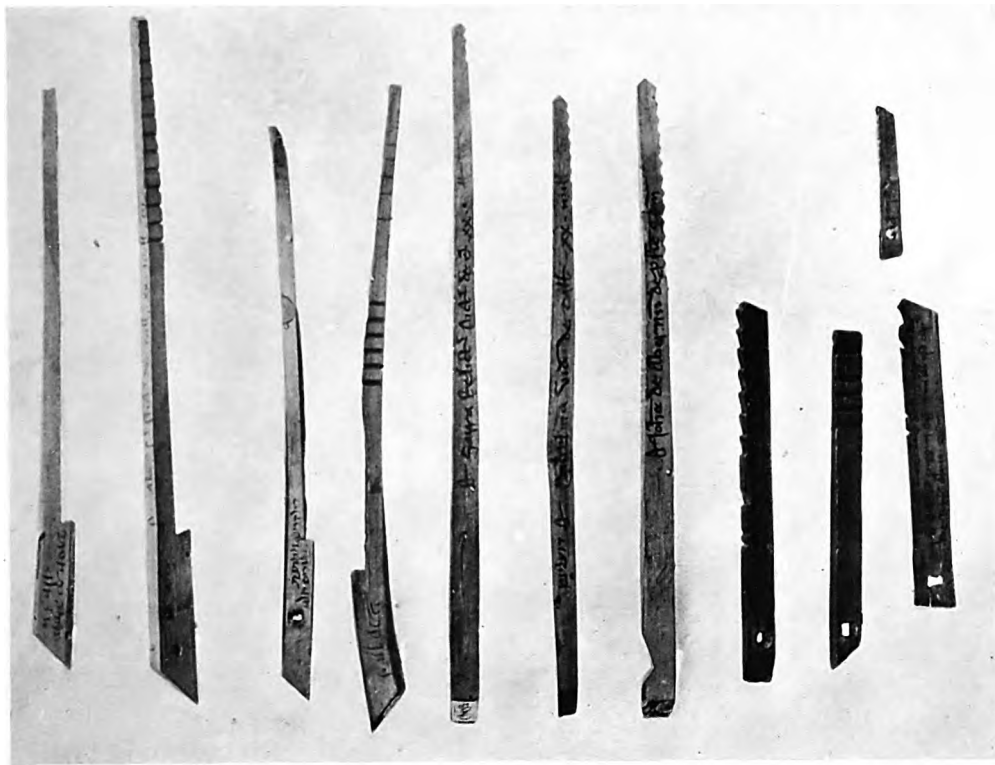
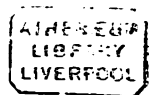


Fig. 2. Exchequer Tallies, thirteenth century, and Private Tallies,
fourteenth century. About $\frac{1}{3}$



early private tallies, other examples of which may be seen in the Record Office Museum, in the British Museum, and in various reproductions—for instance, the Letcombe examples in the Pipe Roll Society's introductory volume and those in Mr. Norman's article.

(1) Private tallies were popularized by the sheriffs, who collected small sums for the Exchequer, giving the debtor a tally which would acquit him at the Exchequer. The practice was treated of in the Statute of Rhuddlan (12 Edw. I) already mentioned.

(2) Whereas our examples of Exchequer tallies have all been stocks, it is more generally the foil of the private tally which has survived. This, of course, need not throw out the calculation of the notches.

(3) It is generally possible to make out the notches, but they are not always according to rule in the matter of size and seldom in that of position: it seems, however, from examples and from passages in records that it was not uncommon to write as well as cut the amount: there is an excellent instance on a fourteenth-century *de Banco* roll, where a tally produced in an action was inscribed with the amount as well as being *signatum per scocches*.¹ This, by the way, is one among many examples of the tally in legal proceedings.

(4) The obliquity of the transverse cut is frequently preserved, but very often only by sloping the cuts inwards, not by making it at an angle across the face of the tally as was done at the Exchequer. The writer can find no system in the cutting of the ends.

(5) We may distinguish roughly three varieties of private tally:

- (a) Very simple form on which is written *pro* followed by the name of the person to whose advantage record of the payment stands.
- (b) The tally *contra* X Y Z *de* such and such a sum with, perhaps, added particulars of the transaction.
- (c) The form which is inscribed *Tallia* X Y Z, the tally of so-and-so, *de* such and such a sum.

The second of these seems generally to have been used when there were, so to speak, three parties involved: the tally is against *B* of (*de*) certain moneys received from *C* for which *B* will have to account to *A*. Thus Letcombe belonged to the Abbot of Cluny: the Letcombe tallies acquit tenants there in the eyes of the abbot or his receiver as against the reeve who had collected the moneys: the form is therefore *contra prepositum* (against the reeve). Again, the British Museum tally *contra* Ralph de Spigurnel, constable of Dover Castle, concerning the ward—

¹ With this curious word compare the modern French *coche*, meaning the mark on a tally: it survives in *hop-scotch*.

i.e. the charge for repairing that castle—of Gravesend, would acquit the men of Gravesend at the Exchequer as against the constable.

The third form is again more simple: in the use above cited it would witness in favour of *A* that he had spent certain moneys upon *B*. For instance, of two private tallies in the Record Office Museum one reads: 'Horton. The tally *of* Thomas Symonds reeve there, of £14 *paid* to Stephen Velewet'; the other is *against* the reeve of Letcombe of money *received* by him of the farm and rent of [the term of] St. John.

(6) Finally, it must be remembered that the nearer a man was to official life the more his private tallies would be governed by the Exchequer rules.

Summing up, we may say that the form of private tallies varies indefinitely with circumstances: while these notes should have shown that the cutting of Exchequer tallies went by immutable rule from the twelfth century downwards.

XVII.—*On Italian Armour from Chalcis in the Ethnological Museum at Athens*, by CHARLES FFOULKES, Esq., based on photographs, notes, and measurements made by RAMSAY TRAQUAIR, Esq., A.R.I.B.A.

Read 2nd February, 1911.

FOR some years past a collection of helmets and portions of plate armour has been exhibited in the Ethnological Museum at Athens which, in spite of the exceptional interest which attaches to it, has up to the present time escaped the serious consideration of writers on the subject of the defensive armour of the Middle Ages. It is especially interesting because, from the time of the discovery of the collection to the present day, there has not been any attempt to restore or alter the condition in which the pieces were found, and when we consider the frequent mistakes made formerly, in other armouries, in this direction, this alone should recommend it to the study of those interested in mediaeval equipment.

It was discovered in the year 1840, during some alterations to the military hospital in the Castle of Chalcis in Euboea, thirteen miles from Thebes, and, according to the historian Buchon, who was present at its discovery, was bricked up in a casement (*un réduit*) which was brought to light by the falling down of a party wall. Hefner, in his *Trachten des christlichen Mittelalters* (vol. i, p. 83), gives a plate of very indifferent reproductions of some of the helmets, and states that they were found in a *cistern*. It seems quite unlikely, from the condition in which most of the pieces must have been when last used, that they should have been intentionally walled up shortly before the evacuation of the castle, for they would hardly have been worth the trouble of preserving. But it seems far more probable that they were thrown aside as needing repair or as past repairing. Hefner gives no authority for his statement that they were found in a cistern, and Buchon only mentions the fact of their discovery, and does not give a detailed description of the place in which they were found.

The armour was removed to Athens, where it was at first placed in the museum of the Acropolis, and, after some changes, was finally deposited in the Ethnological Museum.

Buchon's knowledge of armour seems to have been but vague, for on the existing labels, which are attributed to him, we find fourteenth-century bascinets and Venetian salades indiscriminately described as *Casques normands*, *Croisades du XII^e Siècle*.

In the notes on the discovery which Buchon gives in his *La Grèce et la Morée* (p. 134) he suggests that this collection formed part of the spoil from the battle of Lake Copais, where the chivalry of the Morea was defeated by the Catalan Grand Company in 1311. A mere glance at the armour, however, will show that this cannot have been the case, for there is little that could possibly be of so early a date.

The Castle of Chalcis was captured by the Turks from the Venetians in 1470, and it is the period from the middle of the fourteenth century to this date which exactly covers the style of helmets and armour of which the collection is composed. The sole exception to this is a morion, which is stated to have been part of the find. If this is really the case it is strange that there should be no examples of the change in armour between the mid-fifteenth and seventeenth centuries. Buchon does not mention the morion in the work above referred to, and it seems far more probable that it came from some other source, and has been included in the collection by accident.

There are at present sixty-three helmets in the collection, but the highest label number is ninety-five, and Buchon speaks of *une centaine*, so it is apparent that some specimens have been lost or disposed of.

Buchon mentions *Énormes Casques de Siège avec épaulières et leurs poitrails formés d'une seule pièce de fer. La visière seule est mobile. . . .* Either these helms are part of the lost specimens, or they are the bascinets, nos. 1, 2, 3, or 6, 7 on plate LII, which have no *poitrails* of a single piece of metal, and weigh only eight or nine pounds at the outside. He further states that a strong Maltese in his party could not wear one of them for more than ten minutes 'without grave discomfort'. Against this we must place the fact that the helmets are practically unlined, and that the Maltese had no body-armour to take the weight of the helmet from his shoulders, for a headpiece of eight pounds resting on the shoulders could not possibly cause discomfort in such a short time.

Besides the helmets there are two large cases full of pieces of body-armour, cuisses, knee-cops, jambs, gauntlets, and portions of breast- and back-plates. There is also a jazeran coat of plates, and a case full of arrow-heads and caltrops.

On the whole, the armour is in a fair state of preservation, though some of the helmets are partially destroyed by rust. There are no clues, heraldic or otherwise, as to the ownership of the armour, but some of the pieces bear armourers' stamps.

The chief interest lies in the helmets, which in some instances bear traces

of the original linings and coverings. Several are in good preservation, and have not been tampered with in any way. One of them has still the *vervelles* in place, but there is no chain-mail in the collection.

There are some good specimens of the great *bascinet* with collar and visor, which is more of the helm order than helmet, and of *salades* there is great variety. Two of these are of the ordinary German type, with long tailpieces, but the greater number are essentially of Italian make, evolved directly from the *bascinet*, and fitting more closely than does the German variety.

There are several Venetian *salades* in good condition, with the T-shaped opening for eyes and nose, a return to the form in favour in ancient Greece. The term 'barbute' is often given to these helmets, or to the large *bascinet* with projecting cheek-plates. As a matter of fact, we are still uncertain as to the meaning of the word, except that it was a headpiece with some sort of chin protection; for Olivier de la Marche distinctly speaks of *la bavière de sa barbute*.¹ The word *barbute* was also used for a man-at-arms, as we learn from Du Cange. With regard to the word *bavière*, it is interesting to note that Buchon has transcribed the words *bachinet à bavière* as *bachinet à bannière* in his edition of St. Remy's description of Agincourt, which shows how careless he was as to the description of armour.

The body-armour seems to be mostly of mid-fourteenth-century to mid-fifteenth-century style, and, with the exception of one or two brass-bound pieces, is plain and unornamented. There are a few pieces slightly fluted in the Gothic fashion, which may be dated about the middle of the fifteenth century, but otherwise there is no elaborate embossing. There are no weapons in the collection except the arrow-heads before alluded to, and this suggests that if the hoard was known to the Turks they, being always more lightly armed than the Europeans, left the armour, but utilized any weapons that were found in the castle.

Buchon states that there were several pieces of armour for boys, but of this there is no evidence. Some arm- and leg-pieces are smaller than others, but all are for grown men, and he was probably misled by seeing separate jамbs and vambraces without the knee- and elbow-cops, which, when added, lengthened the defence.

An account of this collection by Buchon appeared in the *Courrier Grec* (*Tachydromos*), iv. 1841.

The following description of the illustrations embodies the notes and measurements made by Mr. Traquair, the numbers in brackets being those given on the museum labels.

¹ *Traicté des Tournois*, reprint Paris, 1878, pp. 80 5.

BASCINETS.

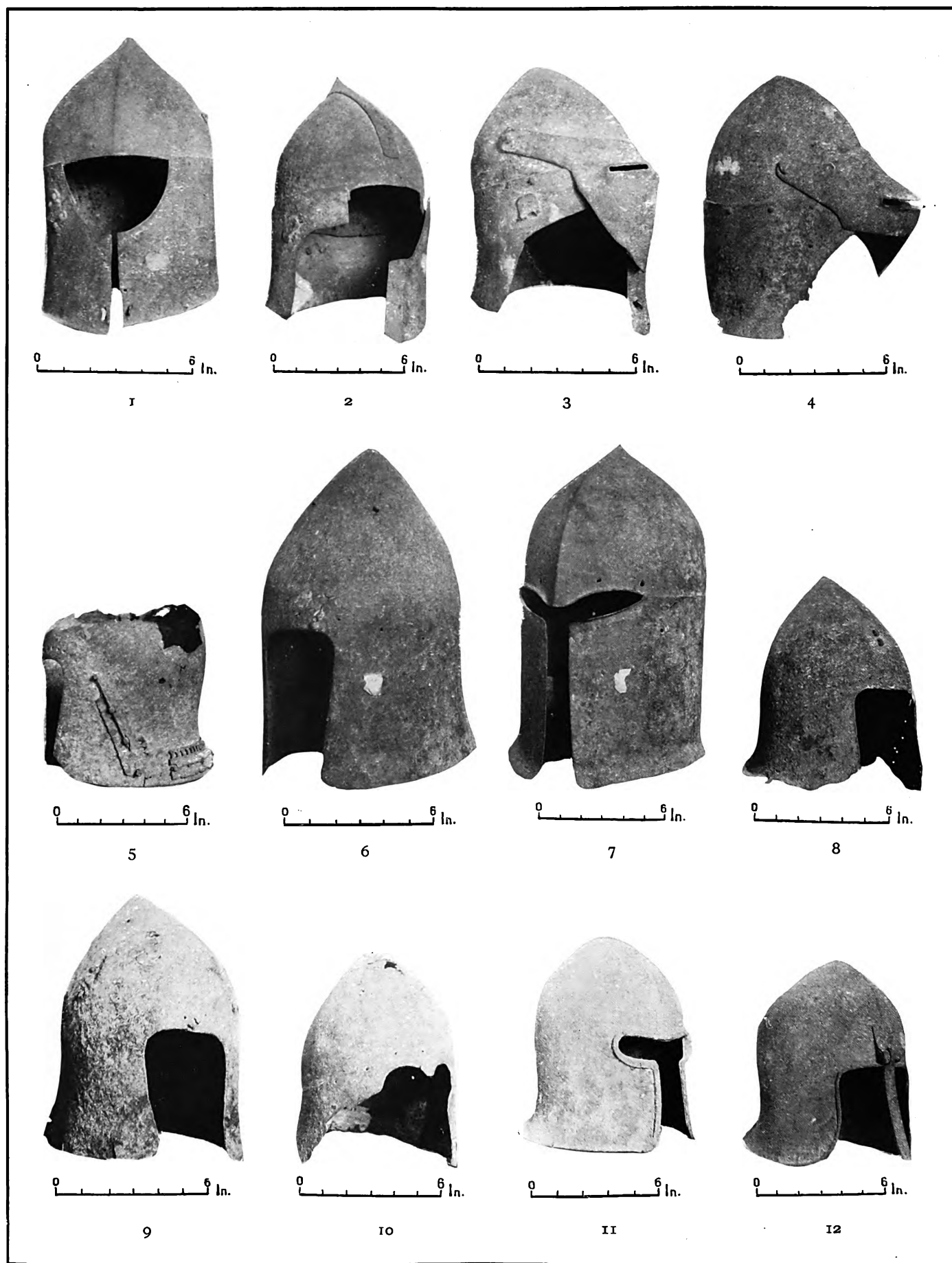
Plate LII, no. 1 (11). Visored bascinet of the latter half of the fourteenth century, 11 in. high by $6\frac{3}{4}$ diameter (28 by 17 cm.), weight 8 lb. 8 oz. (3.85 kilos). This helmet is almost cylindrical in shape, the lower edges bending slightly outward. The crown is embossed in four ridges, terminating in a point. It is formed of three plates: (1) The crown, riveted to (2) the neck and left cheek-piece at about eye level, and (3) the right cheek-piece hinged $1\frac{1}{2}$ in. below the lower edge of the crown. The right-hand plate has an oblong slot at the lower edge, which fits over a turning-pin on the left neck-plate. The visor is missing, but the bolts on which it moved are still in place.

No. 2 (12). A similar helmet with a narrow iron strip, fixed with brass rivets, crossing the crown from front to back, pointed at the apex. The right cheek-piece is missing, and the left cheek-piece is wider than that in no. 1, and is evidently meant to over- or under-lap the right. There is no turning-pin or slot on this plate, and it is impossible to say how the plates were held together, unless a strap was used, as is the case with some armets and burgonets of later date. The visor is missing in this example also. The weight and size are about the same as no. 1.

No. 3 (7). This is similar to the two preceding examples, and of about the same size and weight. The crown is pointed, but is forged smooth and not ridged. The left cheek-piece shows the turning-pin, as in no. 1, but the right cheek-piece is missing. The visor remains, and is pivoted on brass bolts. The vision-slits of the visor are turned slightly outward. The profile of the visor slopes rather sharply from the crown of the helmet outwards, and then drops almost perpendicularly to the neck.

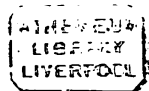
No. 4 (84). In this example the left cheek-piece has been destroyed by rust, and the right neck-plate is also corroded. The right cheek-piece is missing, but the rivet-holes of the hinge which held it in place can be seen. The visor is different in form from that of no. 3. It projects farther, and is more of the 'snout-faced' type. The vision-slit is not divided as in no. 3, but is a single opening, and is strongly turned outward on the lower edge. The left side of the visor is deeper than the right, and is interesting as being an early example of the reinforcing of armour on the side most opposed to attack from the lance. The inside of the crown is strengthened by an iron plate supported by cross-straps of iron. As this example weighs 8 lb. 4 oz. (3.75 kilos) without the missing cheek-pieces, it must have been a heavy headpiece when complete.

There are altogether twelve of these bascinets in more or less the same condition as those described, none of the examples being perfect in every detail, but by comparison of the illustrations one with the other we can obtain a very correct idea of the perfect helmet.



BASCINETS AND SALADES IN THE ETHNOLOGICAL MUSEUM, ATHENS

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No. 5 (86). This is a plain bascinet of rather earlier date than those already noticed. The crown has rusted away, but was most probably pointed, like those on many of the military brasses of the fourteenth century. The vervelles and attachment for the camail are still *in situ* on this example. The thin plate which covered the edge of the camail is perforated with trefoil decoration. In bascinets of this type the lines of the helmet generally fall rather sharply away from the face, following the slope of the vervelles and camail, but in the example before us the plates project well forward, which would seem to suggest that it was the immediate precursor of the collar of iron which is shown on the four preceding examples. The helmet is forged in one piece, and has a slightly downward drop over the nose.

Nos. 6, 8, 9, 10 (25, 31, 50, 47). These are plain bascinets of the ordinary type. From the position and number of the holes in nos. 9, 10 it is doubtful whether these examples were worn with a camail, and they suggest rather that they were intended for attaching the lining. In no. 8, of which part of the right side is rusted away, the line of large holes sloping sharply backwards on the left plate indicates that vervelles were part of the furniture of this helmet. These bascinets average 6 lb. 3 oz. (2.8 kilos) in weight, and some, of which no. 6 is an example, are about 14 in. high (35 cm.), from which it will be obvious that they rested on the shoulders.

The workmanship of the bascinets is unequal, and this may be accounted for by the supposition that repairs or additions were made, by the local armourers with the Venetian army at Chalcis, to helmets sent out from the workshops of more expert craftsmen in Italy. The crowns appear to be all skilfully forged, but some of the cheek-pieces and visors are rather more clumsy in make.

SALADES.

Nos. 7, 11 (77, 19). This type of helmet is usually known as the Venetian *salade*. By comparing it with the preceding examples it will be seen how it was directly evolved from the bascinet by bringing forward the cheek-pieces and lowering the forehead line till the face was completely protected with rigid plate without any hinge or pivot. The form is very similar to that of the Greek helmet with fixed visor. There is another example in the collection similar to no. 7. Both are forged in one piece, and have the lower edge of the back turned outwards, and the front edges strongly reinforced by a broad iron band fixed with brass rivets. These two examples are 11 in. (28 cm.) high and weigh about 6 lb. 10 oz. (3 kilos).

Of the same type as no. 11 there are altogether five examples, of which one only is perfect. They are all about 13 $\frac{3}{4}$ in. high (35 cm.), and vary in weight from

6 lb. 1 oz. to 8 lb. 13 oz. (2.75 to 4 kilos), which is the weight of the example illustrated. The vision slits are slightly turned outwards, but the face-plates are flat edged. The shape of the helmets is cylindrical, with a slight outward bend at the base, and all have ridged crowns. They are made in two pieces—the crown, and the lower plate riveted over the lower edge of the crown at eye level.

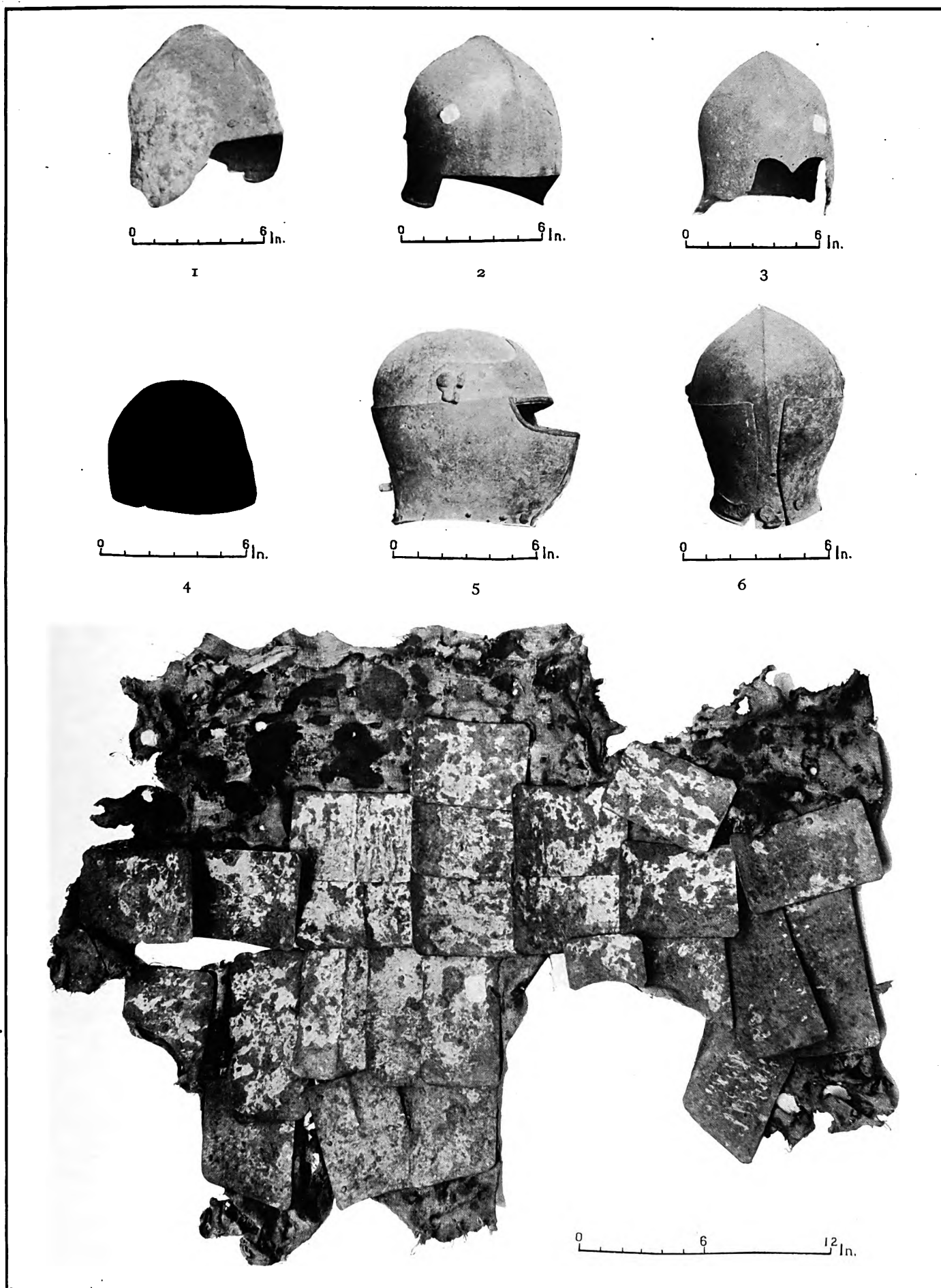
No. 12 (42). Of this type there are six examples, four of which are in bad condition. The shape so nearly approximates to that of the bascinet of the early fifteenth century, and also to that of the early *salade*, that it is difficult to say under which heading they should come. The example before us is the only one which still shows the nasal, though some of the others have the hinge for its attachment. A helmet of this type is shown in the picture of the Rout of San Romano (Nat. Gal. 583) by Ucello. A similar specimen (E. 1) in the Royal Armoury at Turin has spikes fixed on the outer side of the nasal, and has been catalogued by Angelucci as being of the thirteenth century.

Plate LIII, nos. 1, 2 (80, 60). A close-fitting *salade* with strongly marked ridged comb on the crown. No. 1 has a front reinforcing plate, scalloped on the upper edge, and ornamented round the face-opening with a row of brass studs. There are rivet-holes at the back, which seem too large for attaching the lining, and probably indicate that a tailpiece was fixed here. There are two more of this type, but without the ornamented plate. The example illustrated weighs 4 lb. 5 oz. (1.95 kilos).

No. 2 is another *salade* of somewhat the same shape, but the sides are cut away at right angles to the forehead line, and not curved as in no. 1. There are two large holes at the side, which suggest that a visor formed part of this piece. The back is ornamented with brass rivets, which, from their position, and from the fact that the lower edge of the *salade* is turned up and finished all round, do not appear to have fixed a tailpiece. Possibly the studs were to hold a covering of velvet or some other fabric, but there seems to be no trace of any material under the rivet-heads at the present day.

No. 3 (47) is another variety of *salade*. The crown is slightly ridged at the top, but becomes plain and smooth over the forehead, where the line drops sharply in a small nasal. The cheeks are cut away at each side on a curve, and the metal is cut out in a vertical slit about $2\frac{1}{2}$ in. high over each ear. The entire edge is pierced with holes for attaching the lining. The weight of this piece is 3 lb. 10 oz. (1.65 kilos), and there is a smaller specimen of the same type which weighs 2 lb. 5 oz. (1.05 kilos).

In pictures and miniatures of the fifteenth century helmets of this type are often shown with circular plates over the ears, which may possibly have been the case with this example, for it is hardly likely that the ears would have been left unprotected.



SALADES, ARMETS, AND JAZERAN COAT IN THE ETHNOLOGICAL MUSEUM, ATHENS

Published by the Society of Antiquaries of London, 1911

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There are six salades of the ordinary type with ridged crest, reinforcing plate over the forehead, and pivoted tailpiece. There is a hole in the centre of the ridge of each for fixing a plume or crest. The average weight is 2 lb. 5 oz. (1.05 kilos).

No. 4 (64) is the back view of a headpiece. There is no ridge or crest on this example, and it is all forged in one piece. Over the ears the metal is bossed out, a rather unusual contrivance necessitated by the close fit of the helmet. The series of holes at the back, rising in a line from the ears to the centre of the skull, may have been for attaching a lining or covering, or for fixing a tailpiece.

Baron de Cosson has described a similar helmet in the Duc de Dino's Collection, B. 15 (now in the Metropolitan Museum, New York, K. 50), which he considers to be of Spanish origin.

There are seven Turkish helmets of very thin metal, with high conical point terminating in a small tassel-shaped ornament. These helmets are generally forged in two pieces, the point being welded on to the body of the skull-piece. A row of holes is pierced two inches above the base line; in one specimen a link of mail still hangs. This can hardly have been the original use for these holes, as they are much too high for hanging the mail, unless *vervelles* were used, and of these there is no sign. Where Turkish helmets are fitted with a *camail* the rings are hung from the extreme lower edge. The average weight is about 1 lb. 12 oz. (0.80 kilos).

Nos. 5, 6 (82, 83). There are three armets in the collection, which may be dated between the years 1450 and 1480. They are made in five pieces: (1) the crown, continued backwards in a tailpiece to the nape of the neck; (2) a reinforcing piece over the temples, rising to a point in the centre, where it meets the ridged comb; (3, 4) two cheek-pieces hinged on the under-side to the crown; and (5) the visor, which is missing in all three examples. The hinge-plates to which the visor was pivoted are still in place on no. 5. The face-opening is strengthened by a strip of iron of square section round the edge of the skull and cheek-pieces. At the back of the neck is a square pin which held the circular disc which is found on armets of this date, the use of which was probably to protect the weak spot in the helmet, where the narrow neck or tailpiece meets the cheek-plates. The remains of a leather strap are seen on no. 6. To this strap was formerly hung the short *camail* which protected the juncture of the armet and gorget. The average height is 10 in. (25 cm.) and weight 9 lb. 10 oz. (3 kilos).

In all three examples there are large brass studs at intervals round the lower edge. Owing to the obvious weakness of this type of armet, in which the lack of a hook or catch renders the visor liable to be struck upwards, a beaver or *mentonnière* was generally worn in addition, as may be seen in the battle-pieces of Paolo Ucello, but there appears to be no example of this piece of plate armour in the collection.

Armets of this date are rare in collections, and, where they exist, there is often a serious doubt as to their authenticity. In this instance, however, there can be no such question, as the date of the capture of the castle places them definitely before 1470. The same type seems to have been in use for a long period, for, as Viscount Dillon has pointed out, the armet which forms part of the Engraved Suit in the Tower, made by Seusenhofer (II, 5), is modelled on the same lines, though its date is forty-four years later than the specimens before us.

Plate LIV, nos. 1-3 (145, 76, no number). These are breast- and back-plates which reinforced brigandines. No. 1, for the right breast, has the toothed

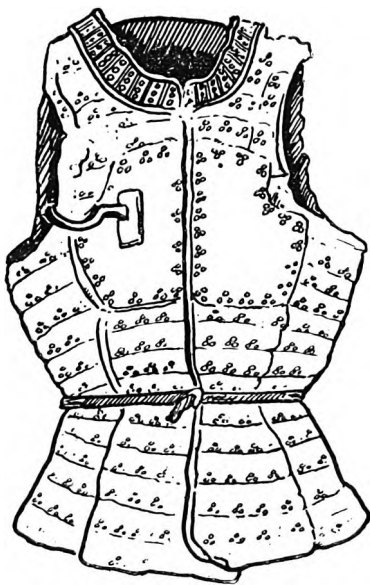


Fig. 1. Brigandine at Vienna.

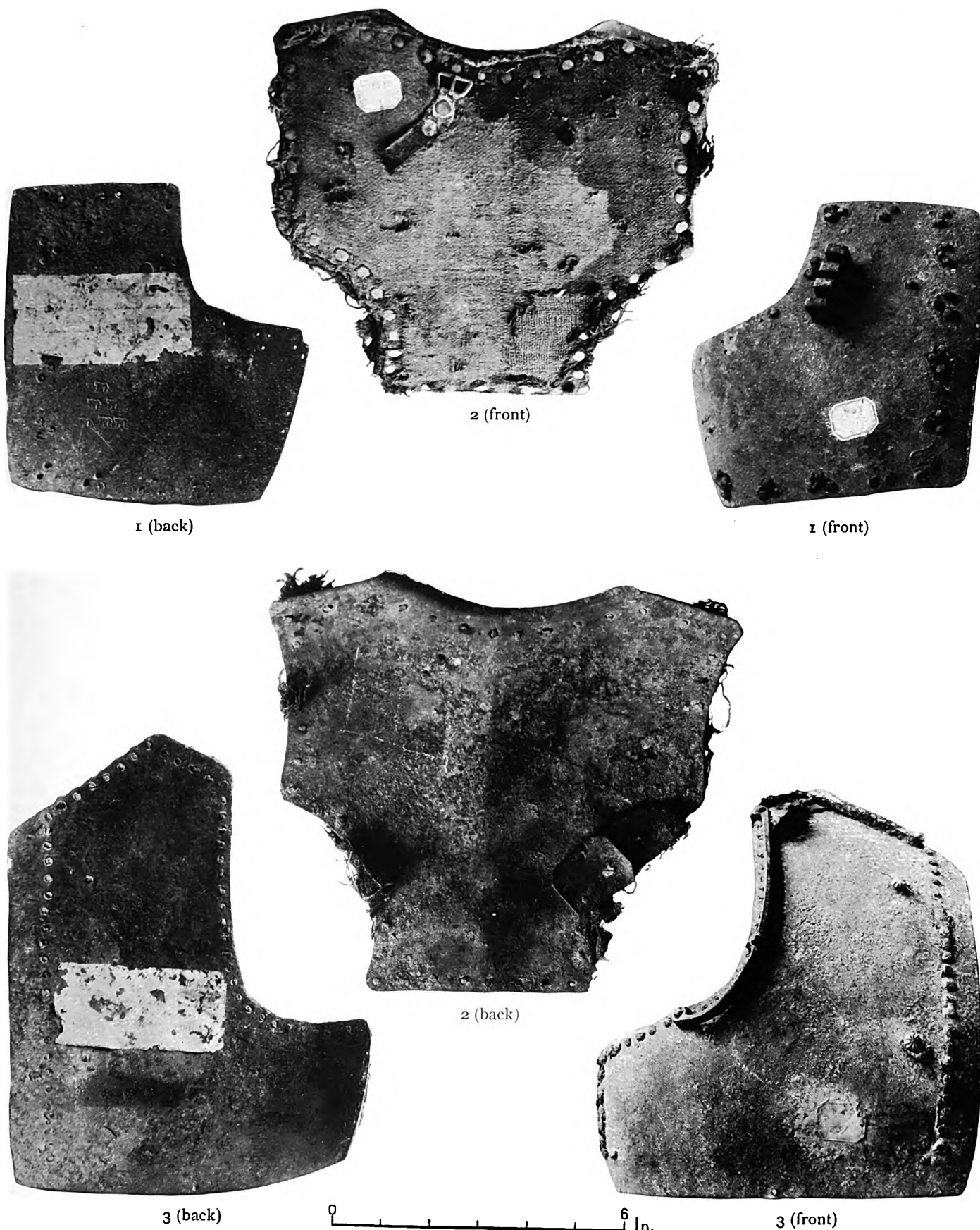
bracket to which the lance-rest was fixed. The teeth are bored vertically with square holes, through which the square-shanked pin was passed to hold the lance-rest in position. These plates are not common in armouries, and are very rare when in their original state on the brigandine. An almost perfect specimen exists in the Imperial Collection at Vienna (Saal xxv, no. 130), dated about 1500, a sketch of which will be found at fig. 1. The rivets set round the edge of the plate formerly attached a covering of fabric similar to that which covered the rest of the brigandine. At the back of this plate is an armourer's mark (fig. 2), repeated six times in pyramidal form. The letters are identical with those used by Antonio da Missaglia, who was working in Milan from 1451 to 1490. The known marks of Antonio are either surmounted by a knot or a cross with divided base (fig. 3), but the similarity of the form of the letters

is too striking to be passed over.

No. 3 is a similar piece of larger size, but without a lance-rest; it is also for the right breast, and still retains portions of the original covering of two thicknesses of fabric under the rivet-heads. A strip of iron is riveted on to the front edge of the arm-space. The mark in this piece is three rosettes (fig. 4), which at present it has been found impossible to trace elsewhere.

No. 2 is a back-piece, still covered with coarse canvas underneath and a finer material above, woven with a diagonal diaper pattern. The fragments under the studs where the material has not faded are red and yellow. On the left side is part of a green canvas strap. There are no breast- and back-pieces of the ordinary type.

Plate LV, no. 1. A tapering iron plate 24 in. long (61 cm.) with a thin tang at the broad end, decorated with brass ornaments riveted on. Its use is unknown.



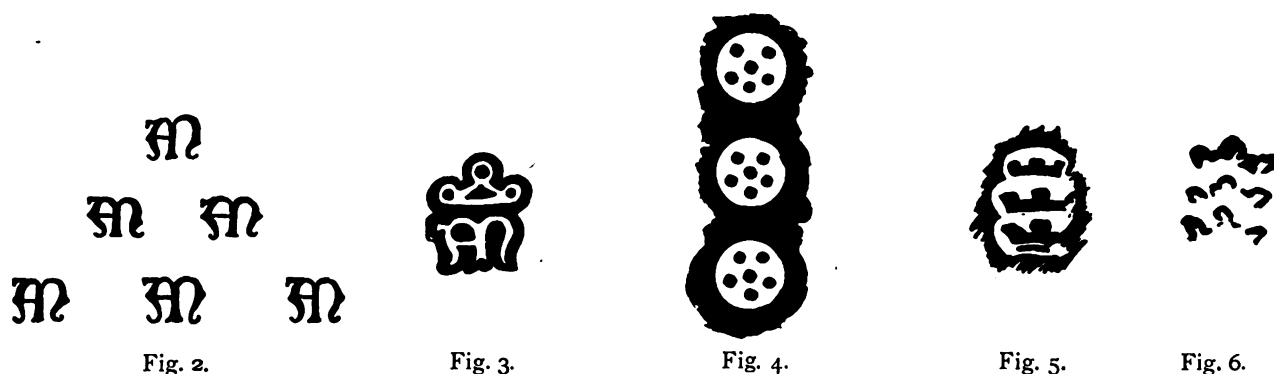
BRIGANDINE PLATES IN THE ETHNOLOGICAL MUSEUM, ATHENS

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It is bent at an acute angle, so a photograph was taken of the two portions separately.

No. 2. A brassard, of about the middle of the fifteenth century, in which the small elbow-guard is covered by a large spreading defence very similar to the reinforcing piece of the sixteenth century known as the pasguard. The vambrace in this example shows the original strap and buckle. Arm defences of this style are figured in the *Beauchamp Pageants* (MS. Cott. Julius, E. iv) and also on Mantegna's *St. George* in the *Accademia*, Venice.

There are a number of jambs, cuisses, and knee-cops of the same date. In one example a jamb has a turning-pin at the top, to which the knee-cop was



fixed, so that the lower defence could be quickly removed, an expedient which must have often been found necessary in forced marches or in fighting over difficult ground. The only piece worth illustrating is the portion of a cuisse shown on plate LV, no. 3, which has a hinged back-plate, showing that it was used by a man who fought on foot and never rode. The statuette of *St. George* at *Dijon Cathedral* shows half-plates hinged to the cuisse in a similar manner.

There is also part of a coat of jazeran armour (plate LIII), composed of overlapping plates varying in size from 5 by 3½ to 7 by 3 in. (13 by 4 to 18 by 8 cm.). The upper part is formed of plates sewn horizontally on a double thickness of coarse canvas, while on the lower portion the plates are sewn upright. The lower part is cut away in two semicircular openings at back and front for convenience on horseback, the long side strips protecting the thighs, as was the case with the Norman hauberk. It is probably of oriental origin.

Of the other armourers' marks illustrated (figs. 5-10), which are found on plates similar to those on plate LIV, none resemble any known stamps except fig. 5, which seems to be the same as an unidentified mark on a *salade* at *Madrid* (D. 14), figured on fig. 6.

It is to be hoped that the museum authorities at Athens will catalogue the whole collection under proper headings, even if *Buchon's* labels are retained

from sentimental interest. It may be that further examination may bring to light other interesting details which will help to identify some of the individuals who garrisoned the castle. Such stores of armour found in one place, and left untouched by the restorer's hand, are rare, and are of the greatest use in the study of defensive armour.

In conclusion, I must express my indebtedness to Mr. Ramsay Traquair and Mr. H. H. Jewell for photographs and minute notes and measurements of the armour and helmets, made for the Byzantine Research and Publication Fund, to Mr. F. W. Hasluck, Assistant Director of the British School at Athens, and to Dr. Radoz, Director of the Ethnological Museum, Athens.

For various reasons it has been found practically impossible to bring all the photographs down to the same scale, so a separate scale is given in each case.

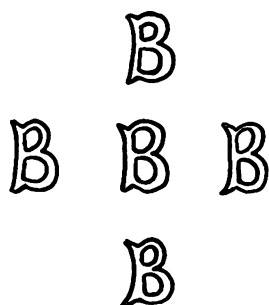


Fig. 7.

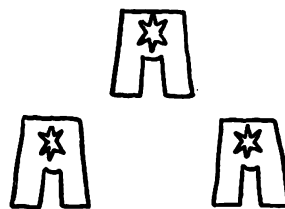


Fig. 8.

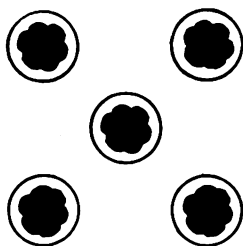


Fig. 9.

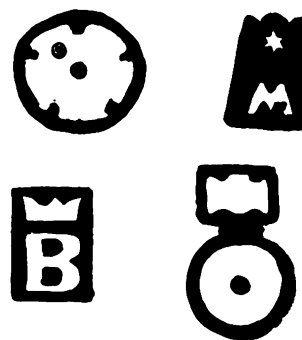
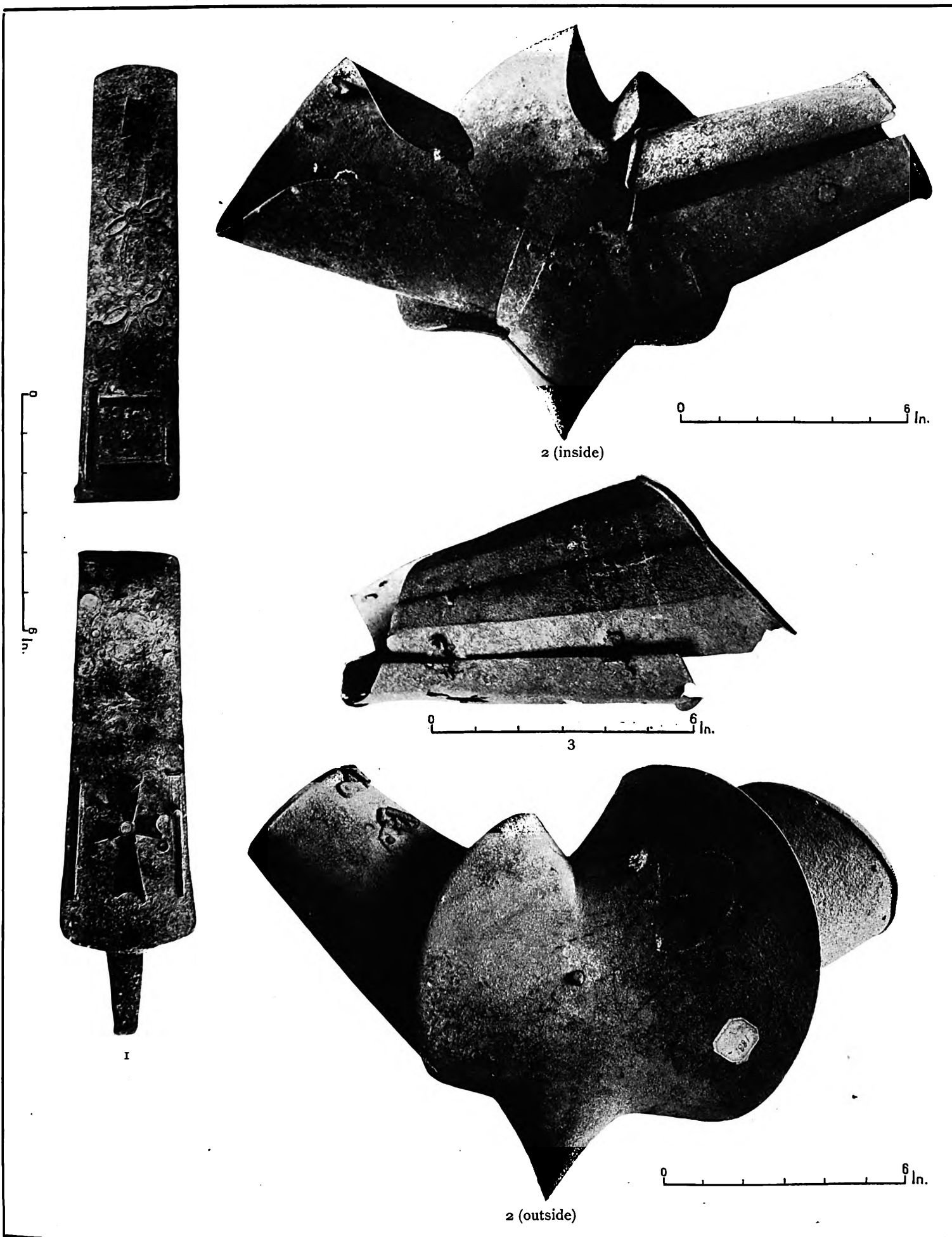


Fig. 10.



BRASSARD, CUISSE, ETC., IN THE ETHNOLOGICAL MUSEUM, ATHENS

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XVIII.—*Mediaeval personal ornaments from Chalcis in the British and Ashmolean Museums.* By O. M. DALTON, Esq., M.A., F.S.A.

Read 2nd February, 1911.

THE publication of the Italian armour from the Castle of Chalcis recalls the existence of other antiquities of similar date and origin discovered in the same place, and now preserved in the British and Ashmolean Museums.¹ While the objects described by Mr. Foulkes are all military, those with which we are here concerned were made for civil uses. They are personal ornaments, and illustrate in a pleasing fashion the knightly civilization² in Greece during the Venetian supremacy in Euboea.

It is not necessary to enter at length into the history of Euboea from the time when the Fourth Crusade brought Greece under the dominion of Frankish barons: the story has been told in detail by Professor Bury.³ Here it need only be said that the two hundred and sixty-five years between the Crusade and the capture of Negroponte (Chalcis) by the Turks in A.D. 1470 has been conveniently divided into three periods. In the first of these, from A.D. 1205 to A.D. 1262, the Lombards held the island under the overlordship of the Princes of Achaia. During the second, A.D. 1262—A.D. 1385, Venetian influence, already exerted through the *baili* of the Republic, increased in proportion as the Achaian suzerainty became weak and nominal. The third period, A.D. 1385—A.D. 1470,

¹ The circumstances of the discovery of these objects do not appear to be accurately recorded. They were purchased by the late Sir A. W. Franks and the late Mr. C. Drury Fortnum after the middle of last century as parts of a find made not long before at Chalcis.

² 'Frankish' civilization; the word is used in its later sense to indicate Western as opposed to Byzantine culture.

³ *The Lombards and Venetians in Euboea*, in the *Journal of Hellenic Studies*, vii, pp. 309 ff.; viii, pp. 194 ff.; ix, pp. 91 ff. See also Sir Rennell Rodd, *The Princes of Achaia*, and W. Miller, *The Latins in the Levant*, in which books bibliographies of works in other languages will be found.

witnessed the undisputed domination of Venice. It is to the last of these periods that the objects now to be described apparently belong; they are for the most part contemporary with the armour; and though local or oriental influences may be here and there observed, the workmanship bears the impress of North Italian art at the time when the courts of Northern Italy lived under a feudal civilization similar to that of France and the north-west of Europe. They are of one age and one culture with the familiar caskets, enriched with intarsia and carvings in bone, on which we see depicted by Italian hands the stories of mediaeval romance.¹

The ornaments in question comprise gold and silver finger-rings and ear-rings; plaques and rosettes of silver-gilt once applied to garments; buckles, tags, and hooks from girdles; and small globular or hemispherical buttons of the most varied description. Since the find, as represented in England, is now divided into two parts, one in London, the other at Oxford, we may conveniently consider each of these in its turn, beginning with that in the Fortnum Bequest in the Ashmolean Museum, as the more homogeneous of the two. It comprises a series of twenty-one finger-rings, all acquired together, and a single large circular disc or button obtained upon a different occasion. These objects may now be shortly described under the numbers which they bear in Mr. Fortnum's Catalogue, and in the order in which they are arranged, illustrations being added in the case of the more important examples. All the rings are of gold except where it is otherwise stated.

No. 376. Plain ring with angular shoulders: the bezel has a large pearl revolving on a pin (fig. 1 *a*).

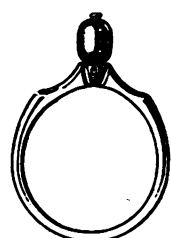
No. 377. The hoop with four projections at equal intervals; between these bands of quatrefoils and lozenges reserved on a ground of niello. Bezel a raised setting containing a crystal of diamond (fig. 1 *b*).

No. 378. Flat hoop terminating in lions' heads; polygonal bezel containing a crystal of pyrites (fig. 1 *c*).

No. 379. Flat hoop enriched with niello and shaped at the shoulders, which end in monsters' heads. High bezel with a long pin on which revolves a collar with four large pearls; above are a large cylindrical pearl and another pearl of smaller size (fig. 1 *d*).

No. 380. The hoop wreathed with corded ribs, between which are panels with scrolls reserved upon a nielloed ground. The bezel, which rises from two volutes, has two collars revolving upon a pin, each set with four pearls. At the end of the pin another pearl (fig. 2 *a*).

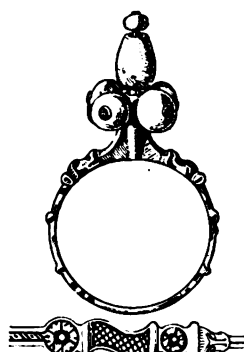
¹ J. von Schlosser in *Jahrbuch der kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses*. xx, pp. 220 ff. (Vienna, 1899); see also other references given in the British Museum *Catalogue of Ivory Carvings of the Christian Era*, no. 400, p. 137.



a (no. 376).



b (no. 377).

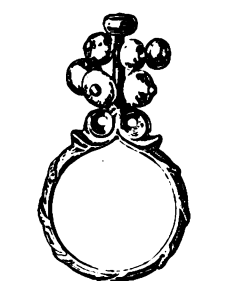


d (no. 379).



c (no. 378).

Fig. 1.



a (no. 380).



c (no. 382).



d (no. 383).



b (no. 381).

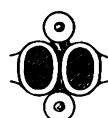
Fig. 2.



a (no. 385).



b (no. 384).



c (no. 386).

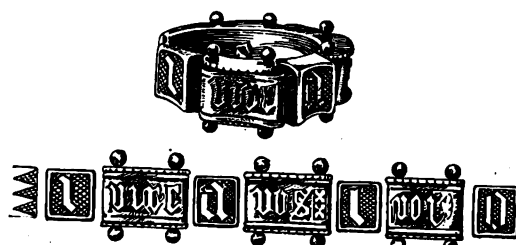


d (no. 387).

Fig. 3.



a (no. 388).



b (no. 390).



c (no. 389).

Fig. 4.

394 MEDIAEVAL PERSONAL ORNAMENTS FROM CHALCIS

No. 381. The hoop has a continuous scroll reserved upon a ground of niello, and terminates at the shoulders in monsters' heads. High bezel, formed of four crockets at right angles to a central baluster, surmounted by five pearls fixed on pins (fig. 2 *b*).

No. 382. The hoop a twist of gold and cable silver wire; the bezel a flat plate, to which five pearls are fixed on pins (fig. 2 *c*).

No. 390. Hollow hoop, which has eight pellets projecting from each rim; it is formed of alternating large and small panels, with legend in black letter reserved on a ground keyed for niello (?). On the larger panels the words *vire vos voi*; on the smaller the letters *a, l, o, l* (?). The ends of letters are foliated in a style usual in the first half of the fifteenth century (fig. 4 *b*).

No. 384. The hoop with three rosettes in relief, between which it is enriched with niello. Bezel formed of two oval settings containing garnets; between them, on each side, a pearl fixed on a pin (fig. 3 *b*).

No. 385. Hoop of triangular section, with a median rib, on either side of which are scrolls reserved upon a ground of niello; it ends in monsters' heads, from which rises a high bezel in the form of a spur with revolving rowel (fig. 3 *a*).

No. 386. Pierced hoop, with three knots at equal intervals; between these a median band of pellets divide two bands of quatrefoils reserved upon a ground once enamelled in green and white. Octagonal bezel set with a sapphire (fig. 3 *c*).

No. 388. Hoop resembling that of no. 381; the bezel also has similar volutes, but instead of a baluster these enclose a pyramidal setting with four claws containing a ruby, and ornamented on the sides with four nielloed flowers (fig. 4 *a*).

No. 389. On the outer side of the hoop the legend, in Lombardic character, reserved upon a ground of niello: *Verbum caro factum est et (habitavit in nobis)*, John i. 14. Cf. no. 391 and fig. 17 *a*. High bezel with four claws, containing an amethyst engraved in intaglio with a figure of Abundantia. The gem is antique (fig. 4 *c*).

No. 387. Slender hoop; pyramidal bezel with claws, containing an amethyst (fig. 3 *d*).

No. 383. Hoop of triangular section with Greek inscriptions reserved upon a nielloed ground; on each shoulder an oval raised setting with a ruby. The ends of the hoop, suggesting debased monsters' heads, support a gold quatrefoiled plate, with four holes for pins on which were fixed pearls now lost. Cf. no. 382 (fig. 2 *c*).

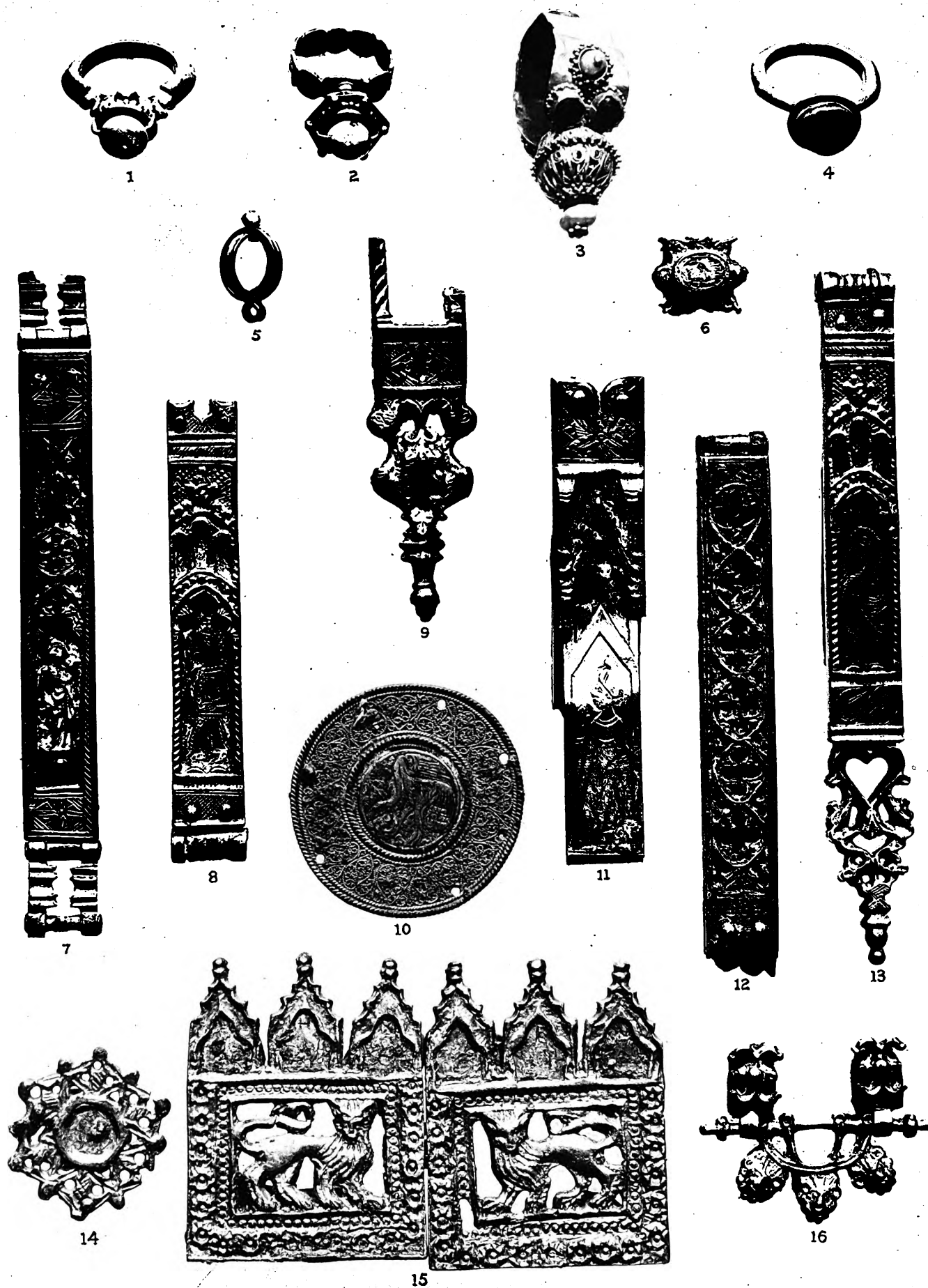
For the inscription, which begins *ΕΚ ΓΗC Ο ΧΡΗCΟC*, &c., see p. 401 below, and cf. no. 396.

No. 391. The outer side of the hoop nielloed with the same legend as no. 389; on each shoulder a leaf-shaped panel with scrolls, continued on the ends of the bezel. Oval bezel set with a plasma with an antique intaglio of Ceres (fig. 5 *a*).

(Similar leaves occur upon the shoulders of Italian rings in the Franks Bequest in the British Museum. Cf. also a ring in the Pichon Collection, *Catalogue*, no. 67.)

No. 392. Bronze gilt signet; octagonal bezel rudely engraved with a lion rampant; on each shoulder of the hoop is chased a leaf (fig. 5 *b*).

No. 393. Signet; octagonal bezel engraved with a shield of arms: a cinquefoil; above, helmet and crest, a demi-eagle displayed. The hoop has on each shoulder a lion (?) on a nielloed ground: the back much worn (fig. 5 *c*).



MEDIAEVAL PERSONAL ORNAMENTS FROM CHALCIS

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No. 394. Silver signet; at the back of the hoop a small pointed-oval panel in relief; on each shoulder is chased a lion, with scroll-work. Circular bezel engraved with a lion sejant and an indeterminate legend in Lombardic letters (fig. 5 *d*).

(A somewhat similar gold ring of about the same date, found in Cyprus, is in the Franks Bequest in the British Museum, *Catalogue of Mediaeval Finger-rings*, no. 250.)

No. 395. Signet; on each shoulder a leaf chased and engraved. Octagonal bezel engraved with a lion rampant within a bordure of sixteen stars (fig. 6 *a*).

No. 396. Hollow hoop, nielloed and enriched with scrolls enclosing three oval panels, that at the back much worn, those on the shoulders bearing a dragon(?) and a lion(?). Circular bezel, with a conventional two-headed eagle in relief, scrolls taking the place of the heads; round the device and round the outer edge of the bezel, Greek legends partly corresponding with those of no. 383, for which see below (p. 401). Much of the niello lost (fig. 6 *b*).

No. 103. Gold disc or button. A circular plate with a garnet in a raised setting in the middle. This is the centre of a cross formed of eight pearls on pins, with four other pearls between the arms. The ground is ornamented with filigree scrolls in plain wire (fig. 6 *c*).

The above ornaments form a remarkably interesting series of mediaeval rings, and when the contemporary Italian rings in the British Museum collection are published, considerable material will be available for comparative study.

The objects in the British Museum are more varied in material, form, and destination. They include four gold rings.

The hoop ending at the shoulders in conventional monsters' heads; high bezel in the form of a calyx of six petals, with a pearled edge. It is set with a pearl pierced by a wire. Weight 230 grs. (plate LVI, fig. 1; and fig. 7).

Polygonal hoop; bezel in form of a calyx, with a raised setting containing a sapphire. Weight 198 grs. (plate LVI, fig. 4).

Flat hoop engraved to represent a cable; high calyx-bezel supporting a hexagonal plate with six pellets and a circular setting containing a pearl pierced by a pin. Weight 125 grs. (plate LVI, fig. 2).

The hoop a broad thin band ornamented with gems and pearls, in raised settings surrounded by pellets: on each shoulder, a pearl and two garnets (one of the latter missing); at the back a garnet. The bezel is a globe of filigree with two zones of pellets, and a pearl revolving on a pin. Weight 205 grs. (plate LVI, fig. 3).

These rings are more massive and less highly finished than those at Oxford. Their relationship to the contemporary goldsmith's work of Italy is less close, and, for want of comparative material, it is not easy to trace their true affinities. The type of bezel in the form of an open calyx occurring in three examples is, if

not unknown, at any rate very rare among Italian and Byzantine rings. The somewhat florid treatment of the last example may point to a Levantine or Adriatic art; while the pierced filigree of its globular bezel, similar to that of Moorish jewellery from Spain, may perhaps be traced to a similar descent. The heavier treatment of all four rings suggests an origin in workshops further removed from immediate Italian influence. Such an origin might explain their rather earlier appearance; though it is possible that they are really somewhat older than the rings at Oxford. The presence of common features, such as the monsters' heads and the pearls fixed on pins in a similar way, seems to bring the two groups into connexion.

The ear-rings of the find are of some interest in view of the comparative rarity with which mediaeval ear-rings are found. They are small and U-shaped, enriched on the outer side with floral scrolls on a ground of niello; in the single perfect example (fig. 8) the loop is secured by a pin with a large pearl at each end. Associated with the above in the Franks Bequest were three gold ear-rings with large hooks and pendants, which may possibly represent a local survival of an antique form. A pair has emeralds in conical settings, and on each ring a single pendant terminating in two pearls and a gold bead; a third has an emerald in a square setting, with a quatrefoil in *champlevé* enamel at the back: it originally had three pendants ending in pearls, one of which is lost. Perhaps it is more probable that these ornaments are late-antique, and intrusive in the treasure, than local survivals of Roman forms in the advanced Middle Ages.¹ But the second alternative is not excluded.

The majority of the remaining objects, which are of silver, for the most part gilt, were apparently fixed to leather belts or girdles of woven fabric. Two are hooks, perhaps intended to support knives, daggers, or small articles; one (fig. 9) represents a crowned figure holding a fleur-de-lys in each hand, the other a monster's head and neck (fig. 10). The destination of the ornament with lion masks on a bar (plate LVI, fig. 16), and of the oak-wreath with acorns (fig. 11), is not obvious, though the former may be the end of a belt; but a number of *plaques d'applique* of various size and form represent, with the buckles and mordants, what was known as the *ferrure* or garniture of the girdle.²

¹ For the type see F. H. Marshall, *Catalogue of Jewellery* (British Museum, 1911), pl. LIII-LV.

² The garniture consisted of the buckle and mordant, and a number of plaques, rosettes, *clous*, bars, &c., which might be of great variety in form, and pierced, enamelled, or enriched with precious stones. An account of A. D. 1351 has an item: *pour faire et forgier la ferreure d'une ceinture d'or sur un tissu azuré dont les cloux sont de dauphins et de liz, à une grenature ronde enverrée d'esmail* (*Compte royal d'Étienne de la Fontaine*, f. 8). See Victor Gay, *Glossaire archéologique*: s. vv. *ceinture*, *clou*.



Fig. 5.

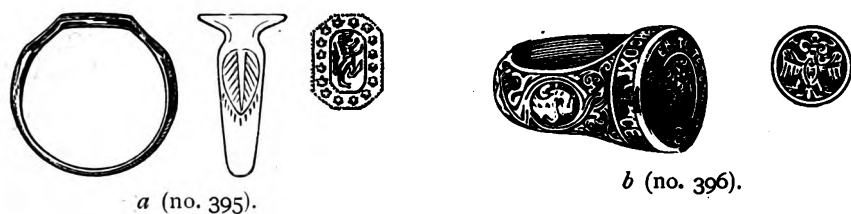


Fig. 6.

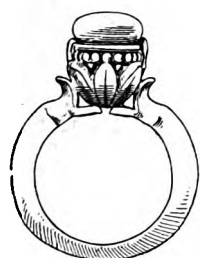


Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 13.

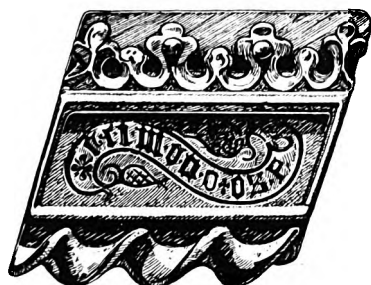


Fig. 14.



Fig. 15.

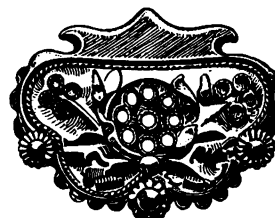


Fig. 16.

One, a member of a considerable series, has a fine pierced foliate design (fig. 12). Other pierced ornaments perhaps represent the *clous* of the garniture (plate LVI, fig. 14); and to the same category more diminutive ornaments may belong (plate LVI, fig. 6). The larger tags and mounts are composed of two inner plates engraved with subjects and framed in Gothic canopies and tracery (plate LVI, figs. 8, 11, 13, and fig. 13): in two cases they have figures in relief (plate LVI, fig. 7). Three finials are preserved: one is well conceived; in one, confronted birds uniting with foliage to produce a symmetrical design (plate LVI, fig. 9). There are four broader buckles of different patterns, one with a male head in relief, another with delicately pounced scrolls on double plates at the back, between which are still remains of leather or textile fabric. Two pierced plaques from the front of a belt (plate LVI, fig. 15) have lions in borders of rosettes, confronted when the girdle was fastened, and at the top three canopies, perhaps once enamelled. On the ground of one of these is incised a letter H(?): traces of further letters are seen in others.

Turning to objects still enriched with enamel, we note in the first place a plaque evidently intended to be mounted on a strap (fig. 14). It is a rhomboidal panel, having, below, an applied twist, and, along the top, a Gothic cresting. It bears an inscription in black enamel on a scroll terminating in finials resembling pomegranates, the ground having finely pounced scroll-work. The sense of the legend, which is in black letter, is at present obscure, though the letters themselves are mostly clear—

ellmod(?)o*ospo(?).

On the back is a sunk panel with a hatched background on which the letters of a monogram or cipher, connected by links of fine chain, are reserved in the metal. Three other plaques have inscriptions reserved in the metal on a ground once filled with enamel; on one is the word **Clara b**¹ in black letter; on the other, now broken into two pieces, are the letters **sa|abæ** in Lombardic; the third, which is fragmentary, has Hebrew characters (see below). We may specially note the occurrence, side by side, of the two mediaeval European scripts, Lombardic and black letter. The former is the character habitually employed in Italy, the latter being more seldom found. It may be noted, however, as occurring on more than one Italian ring in the British Museum, especially on an example in the Waddesdon Bequest, which bears the text *Verbum caro factum est*, as already recorded upon a Chalcis ring at Oxford (no. 389 above).

¹ Possibly *Clara bella*, as on the maiolica dishes of the fifteenth and sixteenth centuries.

In a series of diminutive quatrefoil plaques a shield of champlevé enamel is surrounded by foliate ornament (fig. 15). On the shield a heron-like bird stands upon a green base, the rest of the ground being red; the bird may be heraldic, borne as the arms of some Venetian family such as Cicogna.¹ These little quatrefoils, like the example in the figure, were all originally set in rectangular gilt plaques with studs at the back for fixing to leather or woven stuffs;² but most have lost their settings. A yet smaller rectangular plaque with a shield bearing a large rose, and a thin fragment with a bendy shield, were probably also enriched with enamel, though no traces remain. A few small shield-shaped and rectangular plaques with various foliate designs retain more or less of their enamel, which is of a dark green colour.

A set of shaped plaques (fig. 16) and one or two smaller pieces illustrate the work known as filigree enamel, in which wire encloses the design in the same way as the strips of metal in the cloisonné process. This kind of enamelling is supposed to have originated in or near Venice in the second half of the fourteenth century: it soon spread into Hungary and Eastern Germany, and is perhaps best known to us from the ornament of fifteenth-century Hungarian chalices.³ Its appearance upon this Chalcis metal-work is natural in view of the political and commercial relations between Venice and Euboea, to which allusion has already been made. A medallion, with a fine filigree border, has an enamelled disc with a large water-bird (plate LVI, fig. 10). This was also applied to a belt or garment.

There are a great number of small buttons of different design, many

¹ Buchon, *Nouvelles recherches historiques sur la principauté française de Morée*, &c. (1843), Atlas, pl. xl, fig. 13, reproduces a shield of arms with a similar bird, seen above 'la porte de Chalcis sur l'Euripe', where it was surmounted by the lion of St. Mark. The enamels are possibly connected with the same Venetian family.

² Remains of a fabric inwoven with gold thread appear at the back of several of the enamelled plaques. We may recall the fact that the girdle was often of silk, to which the metal was riveted. In the accounts of the Dukes of Burgundy for the year 1367 we read of money paid to one H. Orlant: *pour faire asseoir sur un tissu tout neuf la ceinture d'argent dorée à aigles de Mgr., et pour ycelle toute dorer et river sur ledit tissu, et pour un tissu de soie, pesant 7 onces, pour asseoir ladite ceinture* (B. Prost, *Inventaires mobiliers . . . des Ducs de Bourgogne*, no. 665). Cf. *ibid.*, no. 2024: *pour 5 onces 3 quars de soye perse, pour faire un tissu de ceinture pour cloer d'or*. Girdles belonging to Henry V of England are described as of silk, *soy noier, tissu pourpre*, &c.; one has *les tissus overtz de hautelice* (*Rotuli Parliamentorum*, iv. 218, 219, &c.).

³ J. Hampel, *Das mittelalterliche Drahtemail*, 1888; E. de Radisics, in *Gazette des Beaux-Arts*, 3rd Period, xxiv, p. 276; Pulszky, Radisics, and Molinier, *Chefs-d'œuvre d'orfèvrerie à l'Exposition de Budapest*, 1884; *Zeitschrift für christliche Kunst*, vii, 1894, p. 139. The British Museum possesses other appliqué plaques with this enamel on a North-Italian girdle ornamented in addition with niello-work of the fifteenth century. This girdle also formed part of the Franks Bequest.

globular, in filigree-work recalling the bezel of one of the rings; others hemispherical, and ornamented on the flat side. A set of buttons, each formed of two circles intersecting at right angles and terminating in a pearl, deserves especial notice (plate LVI, fig. 5). All these buttons were probably sewn in close rows upon the garments, after the fashion illustrated in the secular art of the late fourteenth century.

Some of the legends and inscriptions on the rings and other objects are clear, such as the word *Clara*, already noticed, and the text on nos. 389, 391 of the Oxford series, commonly found on Italian rings of the fourteenth and fifteenth centuries: *Verbum caro factum est et [habitat in nobis]* (John i. 14) (fig. 17 *a*). It occurs on several contemporary Italian rings in the British



a



b



c

Fig. 17.

Museum, and was probably regarded as a charm. In other cases the legends offer great difficulty, even where the letters are wholly or for the most part clear. That of the plaque (fig. 14) is not obvious; nor is the inscription on the broken plaque clear (p. 398). The Oxford ring (no. 390) with *bire bog voi* and *alol* is equally obscure: no. 394 is, to me at least, illegible.¹ The Hebrew letters on the fragments mentioned above read *אֲדָמִי* and *נִרְשִׁי*. Dr. Barnett informs me that they make no sense: he suggests that they may be translitera-

¹ It is not necessary to assume that all inscriptions on Italian jewellery are in Italian: French mottoes were used, e.g. *Loiate passe tout*, *A bon droyt*, and *Plus ault* in the Visconti inventory quoted below.

tions of Italian names, like those of English names in Persian and Hindustani characters upon the gems of signets in the East. The same difficulty arises in the case of the Greek legends on two rings (383 and 396) at Oxford. In each case we have a metrical line: ΕΚ ΓΗΣ Ο ΧΡΥΣΟΣ ΕΚ ΧΘΟΣ ΤΟ ΣΑΡΚΙ(ΟΝ), with the variants ΧΡΗΣΟΣ and ΣΑΡΚΗΟΝ, which, as Dr. P. Maas of Berlin has suggested, may be a Byzantine motto or proverb, though at present he has been unable to trace it in any collection of such sayings. No. 383 has another line, or line and a half, which I am as yet unable to read: ΟΟΑΦΟΙΛΕΠ(Μ?)ΙΛΟΣΕΚΛΕΠΙΛΟΥΤΙΝΧΑ (fig. 17*b*). On no. 396 the following letters are continuous with ΣΑΡΚΗΟΝ—ΑΜΦΟΔΥ(?)ΕΠΛΕΚΑ, while the legend round the bezel appears to run: + ΟΣΓ(?)ΕΤΟΚΟΣΜΟΚΕΡΑΙΤΟΤΕΤΟΤΑΦΟΗΚΙΣ (fig. 17*c*). Scholars familiar with the pronunciation of modern Greek and the corruptions introduced in the Middle Ages may find the clue to the enigma.

The art represented by these objects from Chalcis is mainly Italian and Venetian. But, as we might expect in a Greek dependency of Venice, there are oriental affinities due rather to local influence than to that of Constantinople. Greek or Levantine or Adriatic, the style which this influence represents is more florid than that of Italy; to it we may perhaps ascribe the sometimes fantastic use of pearls and the predilection for globes or spheres of filigree manifested in many of the buttons and in one of the rings (plate LVI, fig. 3). To Byzantine influence, direct or indirect, may be ascribed the two-headed eagle of the Oxford ring (no. 396) and the Greek inscriptions. Though Greek legends upon jewellery might well occur in the Venice of the fourteenth or fifteenth century, it is perhaps more likely that in the present case they were adopted by Italian goldsmiths established in Greece; the rings on which they occur might indeed be described as products of a colonial art. The British Museum has several rings of Italian type with Greek legends on the hoop or bezel: one has a verse from the Psalms (Ps. xxvii. 1); another a typical Byzantine cruciform monogram.¹ The interaction of Eastern and Italian influence is marked in the ring with name and arms of Zeno Donati found in the Morea, and of about the same date as the Chalcis find. Here the form is that of the oriental bow-ring as used down to modern times in Persia and Hindostan.

The features which are definitely Western and Italian are more numerous and distinctive. The various plaques, as we have seen, are almost all decorated in a Gothic style, such as we find prevalent in Northern Italy during the later fourteenth century. The two processes of enamel which occur—champlevé

¹ British Museum, *Catalogue of Early Christian and Byzantine Antiquities*, no. 171.

and filigree—are both Western, and the latter, as already noticed, distinctively Venetian; the Byzantine cloisonné process is not used. The general appearance of all the finer rings is characteristically Italian: they can be matched by examples which have no connexion with Greece. The octagonal bezels of two signets (nos. 393 and 395) are also Italian forms; and the heraldry is Italian, the ‘double-headed’ eagle of fig. 396 forming the single exception. The setting of gems in claws may be regarded as a Western rather than an Eastern method, and minor features, such as projecting rosettes on the hoops, or raised leaf-shaped panels on the shoulders, are equally characteristic. Other features, however, may be regarded as common to the Italian and Byzantine art of the period. Such is the use of niello, though in the present case the Italian origin can hardly be doubted. The termination of hoops in monsters’ heads is also neutral: it comes down from antique art, and was thus indifferently employed in East and West: it is, however, more frequent in the West, and may with some confidence be assigned to the Italian goldsmiths. One or two of the continuous scrolls in the ornament might, so far as their general appearance goes, be either Byzantine or Venetian: here again there is a common origin in antique art, and the vote may be cast in favour of Venice. Taking the find as a whole, we conclude that if the double adjective Veneto-Byzantine is used to describe these ornaments the emphasis should certainly be placed on the first rather than the second word.

The personal ornaments of the Middle Ages are rare, more rare than those of earlier epochs, when such things were buried with the men and women who had worn them. For this reason, perhaps, they make a special appeal to sentiment; they recall to us the less aggressive side of that knightly life which we commonly associate with the spirit of adventure and the body continually under arms. These ornaments from Chalcis are thus a valuable complement to the armour which Mr. ffoulkes has described; some of them may have been worn in more peaceful hours by the very persons who fought in those heavy helmets and cuirasses, others by members of their families and households. There is hardly anything among them which does not form a useful addition to the scanty stock of mediaeval objects of their kind, and we owe much to the generosity of Sir Wollaston Franks and Mr. Fortnum, who bequeathed to public collections objects of such exceptional importance. Nor are they less interesting because, in great part, they represent only the average work of their time. Apart from some of the rings, which are of great delicacy, they are not of supreme excellence; many are of small intrinsic value. The period was one of ex-

travagance in personal adornment; it was an age in which men spent freely on jewels and apparel, and carried much wealth upon their persons. Compared with the possessions of princes and great nobles enumerated in contemporary inventories, many of these Chalcis ornaments are simple things, and would have been held cheap by the greater arbiters of elegance. If we read the lists of jewels in the possession of princely or ducal families in any of the chief European countries at this time, we are dazzled by the bare descriptions. Take from the inventory of the Visconti, dating from the year 1389, the example of a single girdle thus described: *Una cintura d'oro con fermaglio, con zaffiri, due balassi, quarantasei perli, trentaquattro grosse, cinquantasei diamanti, e dieci once di perle piccole.*¹ This is but one of many girdles among a whole treasury of costly things—gemmed crowns and diadems, collars, ropes of pearls, chains, brooches, rings—to say nothing of plate and sumptuous vestments. In France it is the same story. In the inventory of Charles V there are at least twenty-five girdles worn by kings and queens of the House of Valois:² *Item, une sainture, en laquelle a soixante assiettes, et en trente d'icelles, a, en chascune, deux saphirs, deux rubiz et quatre grosses perles, et en chascune des autres trente assiettes, a ung ruby ou mylieu; et ou mordant de ladicte seincture a cinq gros saphirs, cinq rubiz, quatre dyamans et vingt grosses perles; et en la boucle a troys gros rubiz et six petiz, trois gros saphirs, quatre dyamans et seize grosses perles* (no. 58). It is the same in Burgundy. In the year 1375 the jeweller Jehan de Brabant receives payment *pour 5 dyamens, 5 grosses perles et un balay, que Mgr. a fait acheter de lui et a fait mettre en sa bonne ceinture et en 2 jarretiers.*³ There is no difference if we turn to our own country. The inventory of Henry V describes many girdles of silk and other rich fabric 'garniz d'or';⁴ in one the gold simulates hawthorn branches; another is enamelled, a third is enriched with pearls. As for girdles with ornament of mere silver-gilt, they are entered in groups or batches, one of which comprises no less than seventy-nine examples. With objects of this royal splendour the ornaments with which we are concerned enter into no rivalry; they are of a less costly nature, and made by goldsmiths of less repute than those who worked at the command of princes. But a glance at the illustrations to these notes will show that, though much of their work lacks

¹ B. Corio, *Storia di Milano eseguita sull' edizione principe del 1503 con prefazione del Professore Egidio de Magri*, vol. ii, p. 350 (Milan, 1856).

² J. Labarte, *Inventaire du mobilier de Charles V*, pp. 30, 32 (Paris, 1879).

³ B. Prost, *Inventaires mobiliers et . . . Comptes des Ducs de Bourgogne*, no. 2297.

⁴ *Rotuli Parliamentorum*, vol. iv, pp. 215, 218, 219, 220, 221, 227.

finish, they were men living in the atmosphere of a good tradition ; they had a sense of style and an instinctive feeling for proportion too often absent from the craftsmanship of our own day.

The thanks of the Society are due to the Keeper of the Ashmolean Museum for kindly permitting the rings in the Fortnum Bequest to be drawn and reproduced in these pages.



Frank King Mens. et Del.
1890

CAERWENT: PLAN OF HOUSES VIII^N, XXII^N, XXIII^N, XXIV^N, XXV^N

Published by the Society of Antiquaries of London, 1911

XIX.—*Excavations at Caerwent, Monmouthshire, on the site of the Romano-British City of Venta Silurum, in the years 1909 and 1910.* By THOMAS ASHBY, Esq., D.Litt., F.S.A., ALFRED E. HUDD, Esq., F.S.A., and FRANK KING, Esq.

Read 26th May, 1910, and 16th February, 1911.

THE excavations of 1909 were commenced on the 21st of June, 1909, and work was continued until the 6th of December. The work was carried out under the direction of Messrs. Ashby, Hudd, King, Jones, and White.

HOUSE NO. VIII N (plate LVII).

The completion of House no. VIII N was the first work taken in hand. The house was first discovered in 1903, but the complete excavation of it was impracticable, as the ground was not then the property of Lord Tredegar. Three rooms had been partly uncovered, and the walls of these were traced into the adjoining meadow. The house when completely excavated was found to contain nineteen rooms, arranged rather irregularly round three sides of a courtyard, the eastern side being bounded by the street running north and south. This was the only street of the city of which we had not already found traces, and it is now practically certain that the city was divided into twenty *insulae*, by four streets running north and south intersecting the three streets running east and west.

The western portion of the house seems complete in itself, consisting of a series of rooms (1 to 9) opening from a corridor, which itself opens into the courtyard at the south-east angle of Room 9. Room 1 was heated by a hypocaust, only four of the stone *pilae* of which, 2 ft. in height, were left standing in the south-east corner of the room; and a small portion remained of the red sandstone border of a tessellated pavement. The *tesserae* were $1\frac{1}{4}$ in. square, while some smaller red, black, white, and blue *tesserae*, $\frac{1}{2}$ in. square, from the centre were found in 1903. Here were also found, both in 1903¹ and in 1909, several flanged tiles with scored backs and curious curved depressions in the flanges.

These tiles were used to form a hollow wall, and so allow the hot air from

¹ For the description of the western portion of House no. VIII N, Rooms 1-3, excavated in 1903, see *Archaeologia*, lix, pp. 109, 110, and pl. x. One of these tiles is figured on p. 109 (fig. 10).

the hypocaust to circulate completely round the room. The same arrangement was found in the baths excavated by Mr. Octavius Morgan (*Archaeologia*, xxxvi, p. 432).¹

Room 1 had been extended westwards in later times, as a suppressed wall prolonging the west wall of Room 2 northwards could be traced by the trench dug for its foundations, 2 ft. 1 in. wide and 3 in. deep below the level of the floor on which the *pilae* of the hypocaust rested. The furnace opening was in the south wall of the room, and the hypocaust must have been stoked from Room 2. The moulded cap of a small column (fig. 1), 10 in. by 11 in. on the top and from

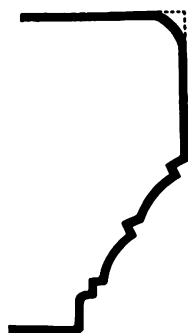


Fig. 1. House no. VIII n. Cap of small column.

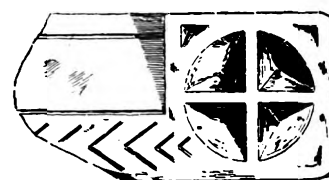


Fig. 2. House no. VIII n. Fragment of decorated stone slab. $\frac{1}{4}$.

a column 6 in. in diameter, was found lying on a level with the bottom of the hypocaust *pilae*, and a fragment of a slab of Bath stone with one edge decorated (fig. 2). The room was entered from Room 4.

Room 2 was evidently open to the air; the hypocaust of Room 1 was stoked from this room, and along its eastern wall was found a large quantity of stone roofing-tiles and several with square ends from the eaves of the roof, as if they had slipped from the eaves over the west wall of Rooms 5 and 6.

Room 2 may have been entered from the west, though for this there was hardly space if the rough apse wall just to the west of it was in existence. There was also a doorway into Room 3 on the south and another into Room 5 on the east.

In Room 2 were found a coin of Constantinopolis and a limpet shell, while close to the east wall was the upper portion of a large pitcher of coarse black ware, and close to the south wall a large iron key.

No floor was traceable in Room 3, which opened into Room 7 on the east. Near the north wall and 3 ft. from the grass level coins of Victorinus and

¹ Similar tiles have since been found in the ruins in Whitewall Brake, called Castle Tump (Ordnance Survey, 25 in., Monmouthshire, sheet xxx. 7, no. 65), about one-third of a mile to the north-east of Caerwent, which from their plan, the character of the construction and the mortar, are undoubtedly those of a Roman villa. Mr. G. Colston, in some excavations he carried out there, found a mosaic pavement 6 ft. square, with *tesserae* 1 in. square. In the central portion, 1½ ft. by 1 ft., was a design of chequers in black and white.

Constantius II were found. Close to the south wall two large blocks of calcareous tufa were found shaped as the voussoirs of an arch: they measured $17\frac{1}{2}$ in. by $10\frac{1}{2}$ in., and tapered from $5\frac{1}{2}$ in. to $4\frac{3}{4}$ in. The west wall of the room, it was noticed in 1903, was carried on two large slabs of sandstone over the stonework of the well, which lay immediately outside it to the north-west.

Room 4 had a fine tessellated pavement, only very small fragments of which remained.¹ The border was of old red sandstone *tesserae*, and the centre of smaller *tesserae* of white and blue lias, old red sandstone and brick. The pavement seems to have been much destroyed in late Roman or later times, there being a hearth of sandstone roofing-tiles in the centre of it, with an edging 2 ft. 9 in. by 3 ft. 6 in. A large bronze Saxon buckle and a bronze bracelet were found on the east side of the room, 1 ft. down from the grass level. A small portion of the drum of a sandstone column $9\frac{1}{2}$ in. in diameter was also found.

Room 4 was probably entered from the corridor on the east, and it also had doorways into Room 1 on the west, and possibly into Room 5 on the south. The wall between Rooms 4 and 5 was destroyed probably when the late hearth was constructed in Room 4.

Room 5 had a tessellated pavement with a border of old red sandstone *tesserae* and a centre of smaller white and blue lias *tesserae*. The room had doorways into Rooms 2, 4, 6, and the corridor on the east. A flat round stone, 1 ft. 8 in. in diameter, was found in the corridor, and may have formed a step into Room 5, but the east wall had been much pulled about, and there was no certainty about this.

No trace of a floor was found in Room 6, and a trench cut across the room revealed nothing; but close to the south wall a coin of Constantius II and a lead plumb-bob or weight were found. The room was certainly entered from Room 5, and perhaps from Room 7 and from the corridor on the east.

Room 7 was entered from Room 3, perhaps from Room 6, and from the corridor. On the east side of the room a coin of Constantine the Great was found 2 ft. from the surface, and another coin of Constantine and a bronze brooch in a trench cut across the room. The walls of Room 7 A were not preserved high enough to show any doorways, and no sign of a floor was visible. This was probably only a shed, with a lean-to roof, and almost certainly added later.

Room 1 (in its earlier shape) and Room 2 may have formed one continuous corridor on the western side of the house.

Room 8 seems to have been entered from Room 9, and not to have had an entrance from the corridor. Just outside the south-west corner of the room the fragments of three pewter pots were found. Another trace of alteration in this

¹ It is noted by Octavius Morgan (*Archaeologia*, xxxvi, p. 425, pl. xxxiii), 'No. 1, remains of tessellated pavement, disturbed and partly destroyed.'

house was an earlier wall on the east side of Room 8, below floor level. Most probably this had only been an alteration in the division between these rooms, the earlier door having been at the north end.

Room 9 had had a tessellated pavement, but only a few loose *tesserae* were to be found, and it was probably entered from the corridor. A fine bronze cross-bow fibula (fourth century A. D.) was found in the south-west corner of the room 1 ft. below the grass surface, but a trench across this room revealed nothing.



Fig. 3. Column in Angle of Room 11, House no. VIII n.

The courtyard had on the north side a gravel floor 1 ft. 6 in. below the grass level; under the gravel a layer of lime rubbish, and below this again a bed of stone chippings—refuse, no doubt, from the building of the walls. The rest of the yard was carefully trenched, but yielded nothing of importance.¹

The space we have numbered 10 was probably not a room but a recess of the courtyard, with a door into the space north of the house, and between it and the city wall. A quantity of whelk and oyster shells and a stone with wall plaster sticking to it were found in a trench cut across the space. The plaster was coloured red, yellow, and purple. A drain in the natural clay bottom was found as shown in the plan.

¹ In the north-west corner of the courtyard a bow fibula was found; it had no spiral spring, an elongated cross-piece at the top, and a ring beyond this. It probably belongs to the second century A.D.

Rooms 11, 12, and 13 form a block to themselves, the east side being next to the street and the main entrance from the courtyard. The block was probably used as a workshop. Room 11 had a curious construction in its north-west corner; a small column, $8\frac{1}{2}$ in. in diameter, was built into the angle, with a slab of stone 3 ft. 1 in. by 2 ft. 2 in. laid across the angle in front of it (figs. 3 and 4). This may possibly have been a domestic altar or a niche to hold a statue or statuette. The top of the column was level with the top of the wall as preserved, and 1 ft. 3 in. above the top of the slab. No trace of any other paving was found in the room. Many fragments of pottery and some twenty coins were found in this room of the following emperors: Tetricus (2), Claudius Gothicus (6), Antoninus Pius (1, silver-plated, Cohen 301, found under the south wall of the room), Probus (1), Carausius (1), Allectus (2, very good), Constantine I (1). The coins of Allectus are in mint condition. Room 11 was entered from Room 13 on the south.

Room 12 had a rough gravel concrete floor, and was entered from Room 13. Built into the north wall of Room 12 was the cap of a column of the same pattern as that in Room 11. No doubt both of these came from the ambulatory round the courtyard. Two lower millstones and a fragment of a drum of a column were found here. Coins of Claudius Gothicus and Tetricus I were found on the east side 1 ft. 6 in. down from the grass level. Room 13 occupied the whole of the southern portion of the block, and had two small enclosures off it, one in the north-east corner, not paved, and the other, paved, in the south-west corner. The floor was laid with sandstone slabs and the lower stone of a quern was found near the south-west angle. The paving on the east side of the room was at a slightly higher level than that on the west. Forming part of the rough pitching of the enclosure in the south-west angle and set regularly in its centre was an inverted plain chamfered base (fig. 5), the top measuring 1 ft. 5 in. by 1 ft. and the bottom 1 ft. 10 in. by 2 ft., and 10 in. high. In the north-east corner was a quantity of dark red-coloured plaster with white painted lines on it. The main entrance was in the south wall of Room 13, leading into the courtyard, but only small fragments of the threshold stone were preserved.

The block (Rooms 14-19) which bounded the courtyard on the south side was not well preserved, and the positions of the doorways could not be traced.

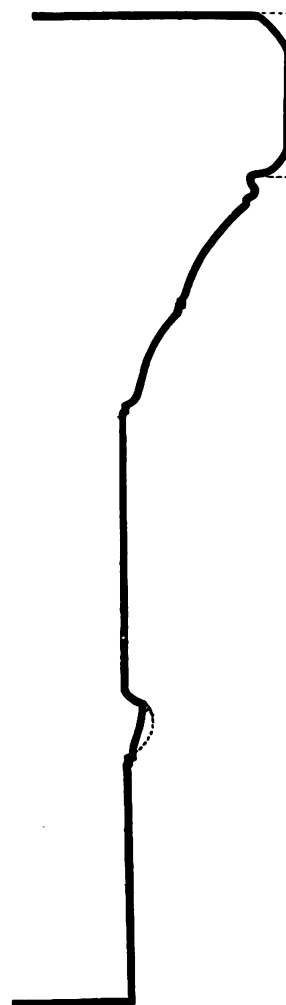


Fig. 4. House no. VIII N.
Column in Angle of Room 11.

Adjoining the east wall of Room 14 was a longitudinal furnace, 3 ft. 3 in. long by 1 ft. 2½ in. wide inside, and in the north-east corner under the old red sandstone slab paving a pit was found. Just under the slabs was a coin of Constantius II, and from 3 ft. 6 in. to 4 ft. 6 in. down some Samian pottery, one piece bearing the mark MAIN/. At 6 ft. down a worn first brass of Vespasian was found, and, just below, three bow-shaped fibulae¹ and a bronze ring. A fine Samian bowl² (Dragendorff 37) (pl. LVIII, fig. 3) in fragments was found at 14 ft. 6 in. down. This bowl has been very carefully put together by Dr. John Cropper, and is now in the museum at Caerwent. There were seven rivet holes in it, where it had been mended in Roman times. On the south side of Room 14 coins of Constantine I, Constantius, and Constantinopolis, and one Urbs Roma were found.

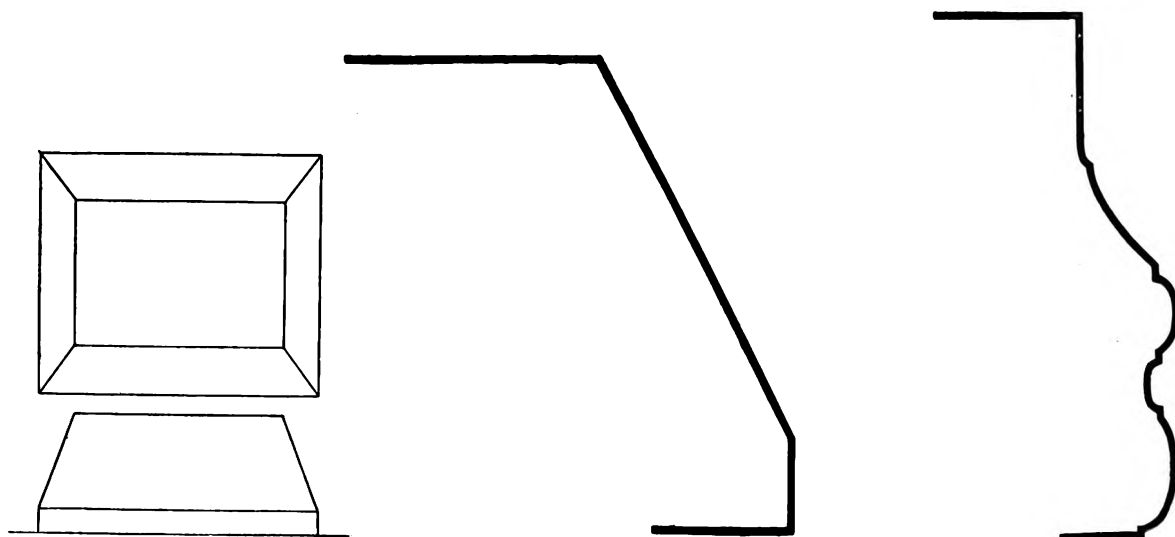


Fig. 5. House no. VIII N: Chamfered base. $\frac{1}{16}$.

Fig. 6. House no. VIII N: Column base. $\frac{1}{16}$.

In the south-west corner of Room 15 a pewter dish 13 in. in diameter was found, and in the south-east corner of the courtyard a number of fragments of pottery. There was rough paving in Room 18, and the straight joints in the walls showed that Rooms 18 and 19 were late additions. There was no definitely

¹ One of these has a plain knob at the upper end of the bow: another has a rectangular plate in the centre of the bow, which was decorated with a circular pattern in enamel: the third is small and plain. They probably all belong to the second century A.D.

² The elements of decoration, in metopes and panels, are as follows:

Upper metope, B.M. Cat. M. 44.

Lower metope, not in Déch. (vase).

Upper metope, Déch. ii. 750 (lion in inverted half wreath).

Lower metope, Déch. ii. 948 (rabbit).

Panel, Déch. ii. 344 (nude male figure to right).

The above is repeated four times.

marked entrance to the courtyard of the house in the street boundary wall, the east wall having been much destroyed.

To the south of Room 18 a well was discovered; the four coping stones, blocks of sandstone 1 ft. 6 in. wide, still lay in position 2 ft. 4 in. below the grass level, forming an opening 2 ft. 2 in. square. Just below them the masonry began to be circular. At a depth of about 2 ft. a bronze enamelled fibula (a circular disc with a six-pointed green star on a blue ground) was found; but with this exception down to 18 ft. from the grass level only a number of stone roofing-tiles and rough blocks of building stone came out, no pottery being discovered; 23 ft. from the grass level a drum of a column 2 ft. long and 9 in. in diameter, with a necking on it, was found, and just below it the base of the same column came to light (fig. 6). Water was reached 25 ft. down; at 26 ft. 6 in. fragments of a human skull, part of the lower jaw, arm-bones, and ribs were found, and at 27 ft. down a hazel twig 6 in. long and an inch in diameter. Further down more human bones, fragments of black pottery, and pieces of oak were found. At 28 ft., where the stonework was very good and the diameter 2 ft. 9 in., was a spindle-whorl of Kimmeridge shale and more pottery and bones. The bottom was reached at 30 ft. below the grass level; the clay was dished 8 in. down to the rock bottom, and the diameter was 2 ft. 8 in. Samples of mud were taken, and were found to contain (according to Mr. E. T. Newton's report): at 26 ft. down remains of field-vole, field-mouse, weasel, toad, a small bird, etc.; at 28 ft. down, dog (toe bone), field-vole, seeds and fragments; at 30 ft. down, mouse, shrew, toad or frog, jackdaw and fish-bone.

HOUSE NO. XXII N.

House no. XXII N occupies the eastern frontage of the street running north and south, directly opposite to House no. VIII N. It contains eleven rooms, and is quite unlike any other building as yet discovered at Caerwent. The house has a frontage of 110 ft. to the street, and for the most part is only two rooms in depth from the street frontage line. Room 1 had a pavement of rough slabs of stone: excavation under the slabs revealed nothing of note. Room 2 had a good gravel concrete floor 3 ft. below grass level, and was entered from Room 7. The wall between Rooms 1 and 2 was not preserved high enough to leave any trace of doorways. The west wall of Room 2 had the plaster still preserved 1 ft. 6 in. above the floor level. The plaster was pinkish white in colour, and was decorated with splashes of red and yellow. A coin of Constantine I was found on the west side of Room 3 three feet below the grass level. This room had traces of a gravel concrete floor at its northern end, but no floor was traceable at the south

end, where there were some curious trenches cut in the red clay. Room 3 had a doorway into Room 4 on the south, but the east wall was too much destroyed to show any entrance. Room 4 was a narrow passage, and nothing was found here to indicate the use of it, or of the small enclosure at its eastern end: under the wall separating this from a similar enclosure in the south-east angle of Room 3 a small pit was found. In Room 5 we had evidence that the site of this house had been used as a rubbish tip before the house was erected. The clay was dug out for some purpose, and the resulting hole filled up with rubbish. The west wall of Room 5 had been built over one of these large holes, the foundations had given way, and the wall had bulged inwards and cracked. A portion of the rubbish pit was excavated down to the natural stratum at the bottom, 13 ft. from the grass level; a large quantity of pottery fragments were discovered, and at 10 ft. deep a second brass of Domitian was found. The pointing of the masonry on the outside face of the south wall of this building was in a good state of preservation.

The south wall of Room 6 was not preserved above the foundations. The eastern wall was better preserved, but was not parallel with the west wall. A good bone knife-handle was found in this room. Room 7 had a good pavement of red brick *tesserae* preserved at its western end, but the pavement was destroyed at the east end and in the apse, the walls of which were not preserved up to the floor level, as shown by the pavement. Several small white and blue lias and red brick *tesserae* were found in the apse, which probably had a finer pavement. Coins of Tetricus I (2), Theodora Augusta, Constans, Constantius II, Valentinian I, and others, all much worn, were found in the room. The apse was in no way bonded into the walls of the room, but that it was at least contemporary was clear from the fact that the wall approaching it on the west passed over its footing. Coins of Allectus, Carausius, and Constantine were found in the apse. Only the footings of the walls of Rooms 8 and 9 were preserved. The wall between 8 and 9 was earlier than the east wall of Room 3, and contemporary with the earlier walls in the south-east angle of that room. Rooms 8 and 9 were probably, in later times, one large room or space, but so very little of the walls was preserved that it was a difficult matter to decide. A bronze bow-shaped brooch with elongated cross-piece was found on the east side of Room 8, and a coin of Magnentius in the south-east corner. A coin of Carausius was found in Room 9. The plan of the group formed by Rooms 1, 2, 6, 7, 10, and 11 resembles somewhat that of an early church, but it would be very rash to assert that it was such a building. It is to be noticed that this part of the house was not directly accessible from the street.

HOUSE NO. XXIII N.

House no. XXIII N¹ is directly south of House no. XXII N, and separated from it by a space of about 2 ft. Coins of Constans and Constantinopolis were found 3 ft. below the grass level in this space. The house consists of a double range of rooms with a courtyard to the south, the courtyard being entered from the street on the west of the house. The entrance, 9 ft. wide, with wing walls on each side of it, appears to have been blocked up by a rough wall, only one course of which was preserved.

No trace of the floors of the rooms was found except in the south-west corner of Room 10, where a gravel concrete floor was preserved. There appear to have been two entrances from the courtyard, one into Room 8, with a good threshold stone and a small porch in front of it, and further east into Room 10, where the two square bases in the courtyard may possibly show the position of a porch in front of a doorway. The two flat slabs just inside the room and close to the wall rather strengthen the supposition, although the easternmost slab of the two was found to be part of a moulded base turned upside down. The rooms in the north range (1-6) were all small, and very little of interest was found in them. The north wall of the house had a set-back towards the north at the north-east angle of Room 4; this was probably due to reconstruction of the western portion of the wall, as was indicated by the fact that the eastern portion joining the north wall of Rooms 5 and 6 is not bonded with the western portion, but goes beyond it, and ends with a broken end. Coins of Gallienus and Constantius II were found in Room 1, and a pair of tweezers close to the south wall of the room.

Room 3 contained a quantity of broken red roofing-tiles, and under these, 3 ft. below grass level, was a layer of charcoal and ashes. In the north-east angle of the room was a sandstone slab roughly triangular (fractured) in shape, 1 ft. 6 in. by 2 ft. 2 in. by 2½ in. thick, and having a semicircular hole (originally circular, now broken), 1½ in. in diameter, in its largest side. A fragment of an upper millstone was also found in this room, and part of a bronze bracelet was found in Room 6. The south wall of Rooms 1-6 was not preserved above floor level, although the natural stratum was reached along this wall 3 ft. 6 in. to 4 ft. below grass level, and the walls were carried right down on to it.

Room 7 was probably entered from 8, which was the entrance hall of the house. The threshold stone of the entrance from the courtyard, 5 ft. in width, was preserved, and the holes for the door pivots were clearly marked. The two short walls running south on each side of the doorway are probably the foundations of a porch. The double doors opened inwards, as is shown by the position of

¹ A small steelyard of bronze with graduated beam was found in the tip from this house, but its exact provenance could not be determined.

the stop on the threshold. It does not seem to have been possible to enter Room 8 directly from Room 9, the wall between the rooms being preserved higher than the level of the threshold into Room 8. Room 9 had plaster preserved on the wall in its north-east angle, but no decoration could be seen; this room had a doorway into Room 10 on the east.

Room 10 is the largest and most interesting room in the house; it had a gravel concrete floor preserved in the south-west corner, and the west wall was plastered, but no decoration was traceable. Small fragments of red, white, green, and yellow-coloured plaster were found in the room.

Another large pit similar to the one in Room 5, House no. XXII N, was discovered under the slabs of yellow sandstone which formed part of the paving of the room, and which had sunk 8 to 10 in. out of level. One of the slabs

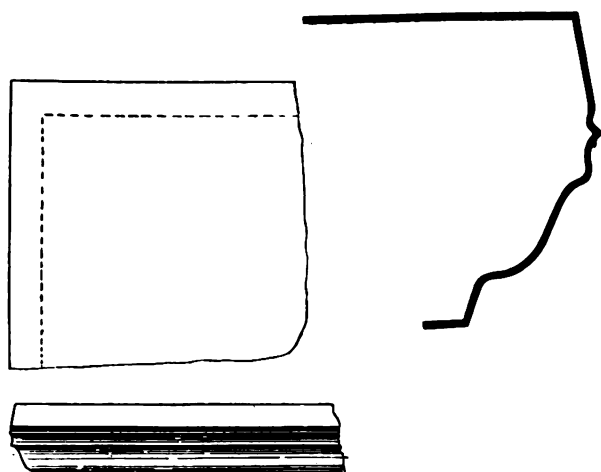


Fig. 7. House no. XXIII N: Moulded slab. $\frac{1}{16}$.

was moulded (fig. 7). Excavation to the bottom of the pit only revealed fragments of common black and red pottery, and a plain bow fibula with elongated cross-piece, no loop, and a plain sheath. Just east of the pit was a hearth of old red sandstone roofing-tiles on edge, measuring 3 ft. 5 in. square, and at the north-west corner was part of a hypocaust flue tile in an upright position. Close to the hearth, coins of Tetricus I, Constantius II and others, corroded and illegible, were discovered, and under the slabs were found coins of Victorinus, Tetricus, Theodora, and Constantine I,

and others illegible, having suffered much from fire. A coin of Valens was also found on the south side of the room. From the thick layer of ashes and charcoal and the mass of old red sandstone roofing-tiles and pieces of stone ridge-tiling found, it is probable that the room was destroyed by fire, and that the roof fell in.

Running from the south-west angle of Room 10 and as far as the easternmost base south of the room was a well-built wall, but nothing was found to throw any light on its use; as its north-west end is broken off, it would appear to be earlier in date than the house. To the east of the sandstone bases and 2 ft. 6 in. south of the south wall of Room 10 three black pear-shaped pots (pl. LVIII, fig. 1, nos. 1, 2, and 3) were discovered, the centre one being the largest; the two to the west were found to contain burnt human bones, and the other was empty. The top of the pots was 1 ft. 6 in. below grass level, and they seemed to have been covered with rough pieces of old red sandstone. Close to the pots, which were 2 ft. apart,

a second brass of Domitian was found. In cutting trenches across the courtyard south of House no. XXIII a well was discovered with one of the original coping stones in place 1 ft. 6 in. from grass level; on the stone was found a second brass of Antoninus Pius, and in the trench just to the north-east a second brass of Commodus. Down to 17 ft. below the grass level the well was found to contain rough stones and very little mud. At 17 ft. a perfect plain grey pitcher with one handle was found; at 17 ft. 8 in. a coin of Valens, and from this point downwards fragments of several broken pitchers, a few small fragments of Samian ware, and pieces of the hoops of a bucket were discovered. At 22 ft. down a coin of Constantius II came to light. The bottom of the well was reached 26 ft. from grass level, and very little water came in. A sample of the mud from the bottom was taken and sent to Mr. Lyell. The masonry of the well was good, and went down to the solid rock; there was no sump-hole as in some of the Caerwent wells; the diameter at the top was 2 ft. 4 in., and at the bottom 2 ft. Just south of Room 9 the yard was pitched with rough stones and rammed gravel, but the pitching was not found east of the east wall of Room 9. The wall just south of the south wing wall of the entrance was probably a later addition, after the entrance to the street was blocked. There were some fragments of old red sandstone paving just to the south of the wall.

HOUSE NO. XXIV N.

House no. XXIV N consisted of a series of buildings of different dates and peculiar plans, not corresponding to those of any ordinary Roman domestic building. The earliest building consisted of the three Rooms 6, 7, and 9, Room 9 and the apse under 10 forming one large room with two doorways, one in the apse at the east, and one to the south, as shown by the large sandstone blocks. It is probable that the apse was originally complete, the large doorway being inserted later. The form is curious, and a plan is therefore given (fig. 8). The thresh-

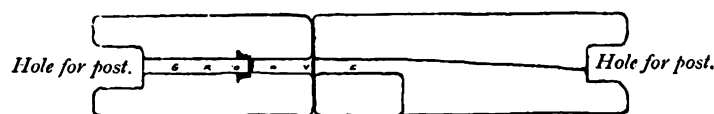


Fig. 8. House no. XXIV N: Plan of threshold. $\frac{1}{32}$.

hold stone at the south-east corner of the yard (no. 12) was probably of the same date. Rooms 6 and 7 were paved with old red sandstone *tesserae*, and the floors were in a good state of preservation, although only the rough foundation of the walls could be found. Just to the west of the threshold in the apse of Room 9 was some rough slab paving.

A building of entirely different plan was next erected, and it consisted of

Rooms 4, 5, 10, 11, and 12.¹ Rooms 4, 5, 10, and 11 were probably roofed, and 12 was an open yard. Room 4 had an apse at its western end, with small pilasters on each side, and a wide opening into Room 5, the same width as the distance between the pilasters of the apse. The apse was built square on the outside, not circular, as was usually the case here. There were some rough slabs near the east end of Room 5. What use these two chambers may have been put to is doubtful, but their plan rather suggests a small church, in which Room 4 would be the chancel with two small transepts and a wide opening to the nave, Room 5. The rough slabs near the east end may possibly have been foundations for a screen to form a narthex. This is, however, very doubtful. Rooms 10 and 11 were built over and completely covered the apse and threshold of the earliest building. In Room 10, over the apse, were found a large quantity of fragments of a very fine mosaic pavement, scattered about at various depths. The *tesserae* were small, and were of various colours.²

Under the floor of Room 6 on the east side, 3 ft. 6 in. down, was found a bow fibula with elongated cross-piece and spiral spring decorated, and in this room was also found a bow-shaped fibula with plain bow, large elongated spiral, and plain sheath.

In the last stage the building consisted of Rooms 1, 2, and 3, and probably some of the rooms of the middle period were also preserved. The building of the well-built foundation of the wide south wall of Room 3 completely destroyed Room 4 (the foundation is 4 ft. wide, but the wall only 2 ft.), and the opening into Room 5 was also built up. When we pulled down the wide wall where it passes over the northern pilaster of the apse, we found the pilaster complete under it, and the northern quoin of the opening between Rooms 4 and 5 was similarly preserved under the late wall. On the east side of Room 1 there were the remains of two walls close together, one of which had been almost entirely destroyed; the south wall of the room had also been taken out. On the west side of the room and just above the rough mortar floor a hoard of about 1,450 coins was found, all minims of the end of the fourth and beginning of the fifth century.

Below the floor level some Samian ware was found, including fragments of several plain cups (Dragendorff 33). Room 2 had a wide doorway into Room 3, which still had its threshold stone preserved. The stone was grooved for the wooden door frame. There was a hearth of sandstone slabs, all much burnt, in the centre of Room 2. The eastern portion of Room 3 had a pebble floor about

¹ These rooms have been kept open for the inspection of visitors.

² This early building, of which unfortunately very little is left, was certainly not an ordinary Roman house, and must have been a public building of some sort. It has been suggested that it may have been the early basilica, destroyed and built over after the construction of the later basilica further west.

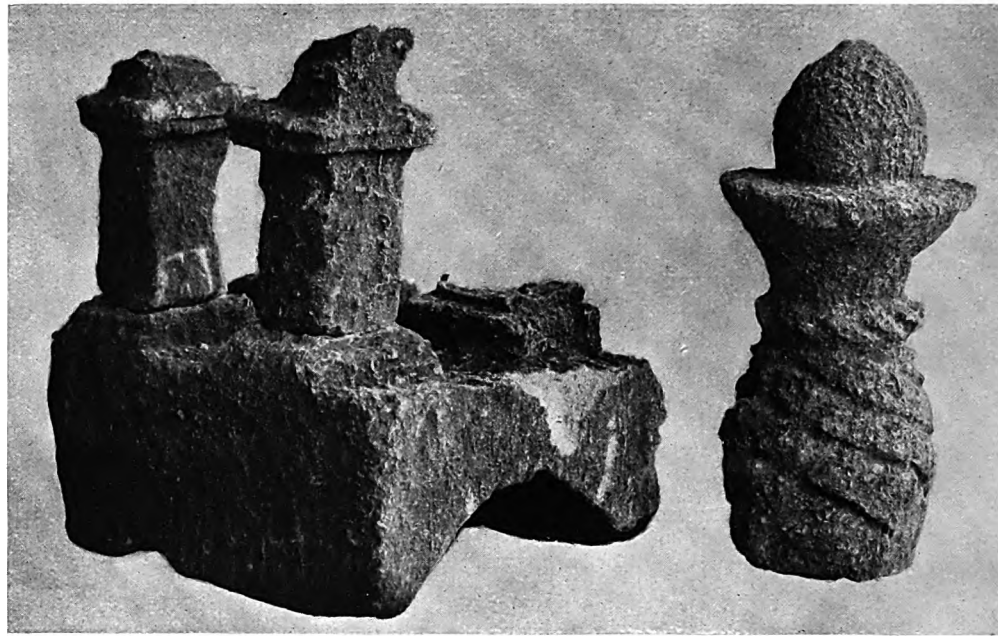


Fig. 1



Fig. 2



Fig. 3

Fig. 1. Finial. From House no. XX s Fig. 2. Altar. From House no. XVI s Fig. 3. Altar. From Pit, House no. XXIV n

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1 ft. 10 in. below grass level, and in the south-west corner of the room just in front of the threshold was a pit. It seemed to have been a trial shaft for a well, similar to pit C 1908,¹ but no water being found it was used as a rubbish pit. The soil was mixed to a depth of 8 or 10 ft. from grass level, and reddish for the next 6 ft. At 18 ft. below grass level was a grey layer, and then red clayey loam to the bottom. A considerable amount of ordinary pottery was found in the last three feet, there being several perfect red, black, and grey pots, together with a small sandstone altar, without inscription (pl. LIX, fig. 3), which had been much burnt. The pit was 21 ft. 6 in. deep, and the only coins found were two of Domitian (worn) at 7 ft. 6 in. and at 8 ft. 6 in., and one of Licinius at 16 ft. from the grass level. A bow fibula of bronze, with elongated spiral and no loop, the bow being decorated (no knob), was found 12 ft. 6 in. down.²

On the north wall of the house near the north-east corner of Room 2 a hoard of about 430 small brasses was found. The dates of the coins ranged from Gallienus to Honorius, including Claudius Gothicus, Helena, Theodora, Constans, Julian 'the Apostate' (a curious little coin with head to right, inscribed IMP. JUL.), Magnus Maximus, Victor, Arcadius, Honorius.

A large well, 3 ft. 6 in. in diameter, was discovered just west of Room 7; the masonry was in a good state of preservation, and water was reached at 20 ft. below grass level. At 21 ft. down the base and part of the drum of a small Bath-stone column 9½ in. in diameter were found, and a large quantity of animal bones. Fragments of antlers of red deer and some pieces of leather sandals were discovered from this point to the bottom. Numerous fragments of hazel twigs were also found. The stonework stopped 4 ft. 6 in. from the bottom, and was carried on large slabs of stone; the sump-hole was cut in the hard red clay, and the bottom was reached at 26 ft. All the wells we have found at Caerwent, so far, appear to be surface wells, and the water in them rises and falls with the rainfall. In the winter time the level of the water is generally about 3 ft. from the grass level. To the west of the well a black cinerary urn (pl. LVIII, fig. 1, no. 4) and a small pot of unglazed red ware were found in a trench 1 ft. 6 in. below the grass level.

HOUSE NO. XXV N.

House no. XXV N is a small house of the Caerwent courtyard type, approached from the street on the south only, there being no entrance from the street on the west. The front walls were very much ruined, but most probably the entrance was through the space numbered 12 into the courtyard. Crossing

¹ *Archaeologia*, lxii, and pl. i.

² From this pit in Room 3 Mr. Newton reports remains of the following animals: fox, bank-vole, water-vole, field-mouse, weasel, shrew, and fragments of snail shells, *helix rotundata*, etc.; and from the well of the house remains of ox, sheep, pig, mouse, vole, marten (?), teal, robin, hedge-sparrow, wren, and other birds, frog or toad, blindworm, fish (*achatina*) and fragments of shells, *helix* etc.

the courtyard, which had a rough pitching at a depth of 2 ft. below the modern grass level (a bronze cross fibula—fourth or fifth century—was found six inches above the pitching), we enter a corridor (no. 8 on plan), which gave access to the rooms on the north side of the courtyard by a doorway in the centre. In front of the doorway there were traces of old red sandstone slabs, as though the paving of the courtyard had at this point been more regular. The threshold stone was

a slab of yellow sandstone with a square hole in the centre; there were no slits for the door frame, and possibly there was only a light wicket gate, for it was certain the corridor was not closed on the south.

A column 3 ft. 5 in. long (fig. 9) was found some 17 ft. east of the doorway lying close to the wall, and it undoubtedly belonged to the verandah. We have therefore to suppose that the wall rose to the height of some 3 ft., with stone columns above. A very striking modern parallel to such an arrangement may be seen in several houses in Abbasanta in central Sardinia. On each side of the doorway pilasters project inwards about $3\frac{1}{2}$ in. The corridor was paved with old red sandstone *tesserae*, which were preserved in places. In front of the doorway was a panel of coloured mosaic, the guilloche edging of which in red, white, blue, and yellow, was alone preserved. Lying on the floor at the west end of the corridor a number of arch voussoirs 1 ft. 1 in. to 1 ft. 2 in. in depth were found. They had probably fallen from the arch over the doorway into Room 7. At the east end of the corridor was a narrow gutter 6 in. wide and 8 in. deep, which ran into the courtyard, and probably took the drainage from the roof over the northern range of rooms. There may have been another door into the courtyard here.

Room 1 had two concrete floors at different levels, the upper one 1 ft. below grass level and the lower one 2 ft. The plaster preserved on the west wall was pink with black splashes on it, and evidently belonged to the early floor level, as traces of a second layer pale mauve in colour could be found. The room could be entered from Room 2.

Room 2 had a concrete floor at the lower level, 1 ft. 6 in. below grass level, and was entered from the corridor and possibly Room 3 on the east. In Room 3 there were slight traces of a concrete floor, but no doorways could be definitely fixed.

Room 4 had a doorway into the corridor, which was roughly built up, and a doorway into Room 5. The concrete floor of the room was 2 ft. below the grass level, and there was a burnt layer 5 in. deep on top of it.

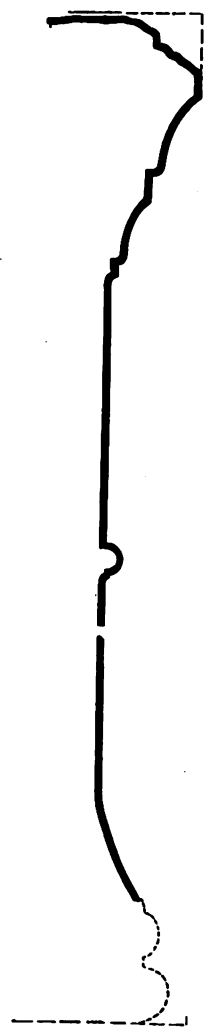


Fig. 9.
House no. XXV N:
Column. $\frac{1}{10}$.

Room 5 had a doorway into the corridor, part of the threshold stone of which was preserved. There was nothing to note about Rooms 5 A and 6 except that the walls were destroyed, only one or two courses being preserved above the foundation level.

Room 7 had doorways into the corridor and Room 10. The threshold slab of old red sandstone, 5 ft. by 3 ft., was preserved at the entrance of the corridor: under this slab were some bones of a sheep, and in this room a small circular buckle brooch was found. Near the south-west corner a small drain passes through the wall into the street, but its use is not clear.

Room 9 had a door into the east end of the corridor. The finding of the stem of a clay pipe close to the east wall of this room, about 3 ft. from grass level, made it clear that we were not the first excavators of the site.

Room 10 had a floor of *opus signinum*, and there were remains of plaster on the west wall, but no colour could be made out. The room was entered from Room 7, and possibly from Room 11. Nothing remains to be said about Rooms 11, 12, and 13 except that the foundations only of the walls were preserved. Room 12 was probably the entrance to the house, and Room 14 was paved with old red sandstone slabs, and had a doorway into the courtyard at its north-west corner.

STREETS.

The streets in this quarter of the city were surprisingly narrow and irregular; it is obvious that there was little traffic. The surface of the streets was about 13 in. below grass level, and was of very rough pitching: 6 in. below this was a layer of better pitching of large stones and gravel. A quantity of fragments of pottery, iron nails, and two coins of Valens were found on the second layer, and below this was the natural gravel. Trenches were cut across the streets, and the cross-roads were thoroughly examined, but no traces of water-pipes or iron collars could be found. The spaces south of the street south of the Houses nos. XXIV N and XXV N were evidently only used as gardens; nothing was found in them except to the south of House no. XXV N, where there were the foundations of a small structure: the walls were well built, but nothing was found to indicate its use. The space between Houses nos. XXII N and XXIII N and the north-east corner of the city wall was thoroughly trenched, but no traces of buildings were found.

The black soil was from 2 ft. to 7 or 8 ft. deep, but only a few fragments of common black pottery were found. It seems probable from the section of the trenches cut that this part of the field in Roman times had been a swamp or marsh. The pottery was all at the bottom, as would be naturally expected in that case.

The excavations of 1910 were carried on under the supervision of Messrs. Ashby, Hudd, King, and Jones in a field called the 'Gaer' and a garden adjoining, belonging to Mr. Joseph Edmonds, of Crick, Chepstow, which was secured for the purpose by the liberality of Viscount Tredegar, F.S.A., President of the Caerwent Exploration Fund. The field and garden are bounded on the north by the modern high-road, on the east by the approach to the churchyard and the churchyard itself,¹ and on the south and west by the large field containing Houses nos. I s-XIII s, which was excavated in the years 1899-1904. The area under examination thus included the eastern portion of the westernmost *insula* on the south side of the high-road and the greater part of the next one to the east of it; a small part of this falls within the limits of the churchyard, and a still smaller part was excavated in 1902.²

The excavations were begun in the western part of the field, and the eastern portion of the first-mentioned *insula* will therefore be dealt with first. The western end of the south boundary hedge of the field is upon the north wall of House no. II s,³ and the trenches which were cut at right angles to this soon revealed the north boundary wall of the street. The street here was some 17 ft. 6 in. wide, and was, as usual, paved with a layer of rammed gravel and stones from 6 to 8 in. thick. Coins of Claudius Gothicus, Tetricus, the Constantine family, and Valentinian I, and a small pair of iron shears were found on the street surface 2 ft. below the grass level.

HOUSE NO. XIV s (Plate LX).

This house occupies the south-east angle of this *insula*. It consisted of a large yard, in the north-west corner of which was a small building of six rooms. The yard was roughly pitched, and was accessible from the street on the east, and probably from that on the south; the main entrance was obviously on the east side, where there was a gateway 8 ft. 6 in. wide, with wing walls on each side of it, the angles being slightly rounded. To the south of the southern of these two walls was another wall, with a broken end to the west. This may have belonged to a porter's lodge, or some structure of this nature. The south-east angle of the yard was rounded off, as it was at the corner of two streets. There was no definite entrance to the yard from the south, only a break in the wall 10 ft. in width, and further west the wall was broken away altogether. Between this and the south-east angle there was a later wall, preserved for a length of 25 ft. just inside and parallel to the yard boundary wall.

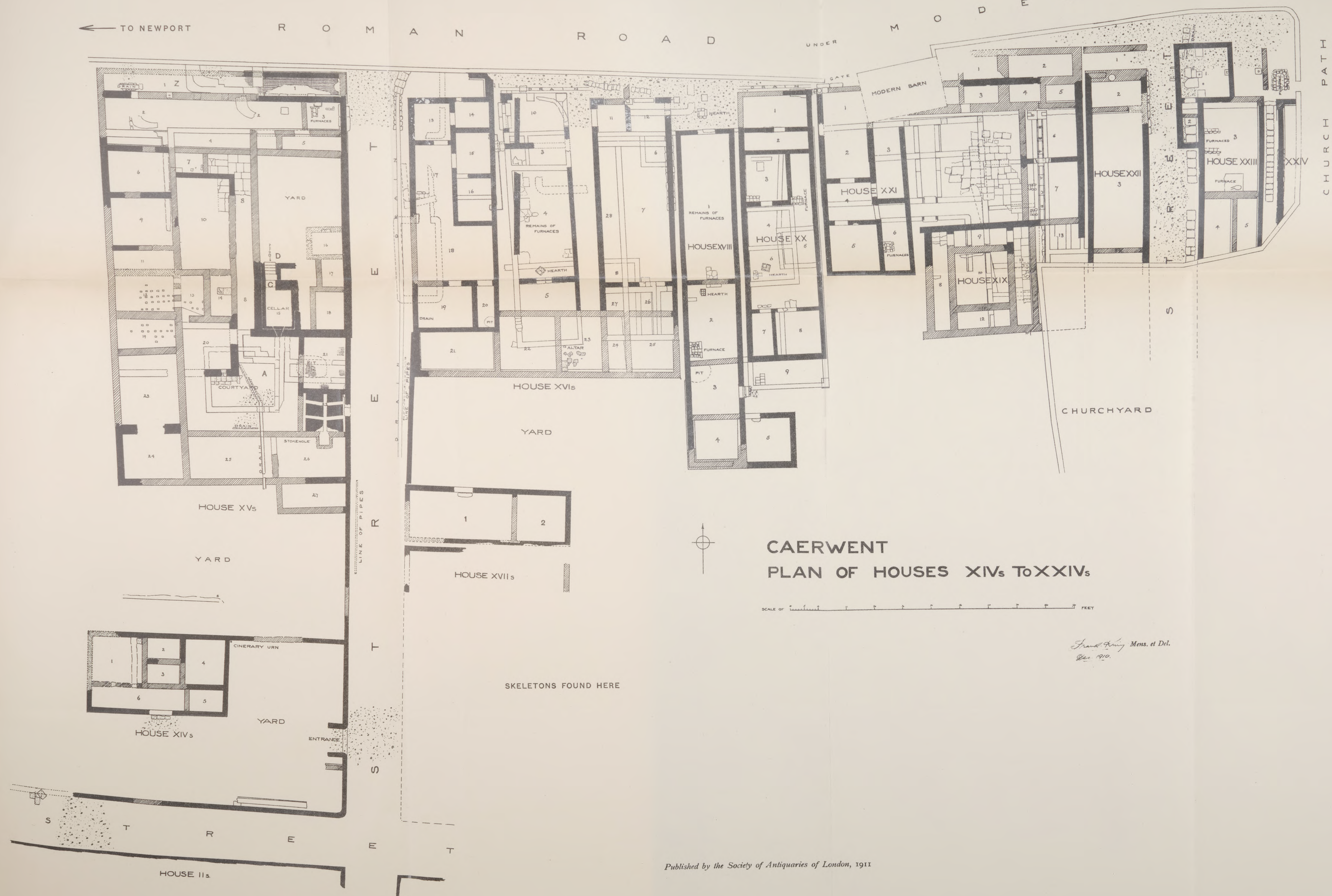
In the house itself none of the floors were traceable. The main entrance was in the south wall of Room 6, and was marked by a step of worn slabs of

¹ For excavations here in 1903 see *Archaeologia*, lix, p. 122.

² *Archaeologia*, lviii, and pl. xxiv.

³ *Archaeologia*, lviii, pl. xxiv.

← TO NEWPORT R O M A N R O A D UNDER M O D E R N R O A D → TO CHEPSTOW



CAERWENT PLAN OF HOUSES XIVs TO XXIVs

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Frank King Mens. et Del.
Dec. 1910.

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old red sandstone in front of it. Rooms 5 and 6 probably formed a corridor giving access to the other rooms of the house. A small furnace or hearth, the bottom of which was formed by a slab of sandstone, was discovered in the north-east angle of Room 1, and there were traces of an earlier wall along the east side of the room. The garden or yard to the east of the house was thoroughly trenched, and just outside the north-east angle of Room 4 a black cinerary urn (pl. LVIII, fig. 1, no. 5) with a handle was discovered. On examination it was found to contain burnt human bones; the top of the jar was 1 ft. 3 in. below the grass level. Coins of Claudius II, Tetricus I, Allectus, Constantine I, Constantine Junior, Gratian, Valentinian I and II, Urbs Roma, Postumus, and Theodora Augusta were found in House no. XIV s and the yard to the east of it. In Room 3 a bronze buckle brooch in good condition, probably belonging to the middle of the fourth century A.D., two iron spear-heads (which are probably late Celtic) (pl. LXI, fig. 5), and an iron axe-head (pl. LXI, fig. 2, no. 1) were found.

HOUSE NO. XV s.

House no. XV s is situated to the north of House no. XIV s, and is separated from it by a yard measuring 54 ft. by 83 ft., which was probably entered from the street on the east. A break in the eastern portion of its south wall may have served as a communication with the yard of House no. XIV s. This house, like House no. XVI s, seems to have been formed out of three distinct buildings, apparently shops, each of which had a narrow frontage to the main road. It was not an easy matter to distinguish the different parts, and it was only in the front of the house that the three early buildings were clearly marked. The whole of the house had been so much altered and rebuilt that we have thought it advisable to describe it as we found it, pointing out the remains of the earlier constructions.

The whole front towards the main road was occupied by a verandah (2). The bases of the columns or posts which carried the roof were in part extant; there had evidently been seven, spaced 10 ft. apart from centre to centre. The bases measured 2 ft. to 2 ft. 6 in. square, and one or two of them had holes 3 in. square sunk in them. This verandah was approached from the street on the east by a flight of steps, which showed considerable traces of wear. They were of sandstone, and varied in width from 1 ft. 3 in. to 1 ft. 6 in., each having a rise of 6 in. The bottom step was on a level with the surface of the street. The verandah had been common to the three early buildings, and in course of later alterations was done away with, and another (1), encroaching upon the main road and projecting beyond the original frontage line of this house and the one to the east (XVI s), was placed to the north of it, and paved with old red sandstone *tesserae*.¹ At a still later period (possibly in the Middle Ages) some large but

¹ Under the *tesserae* were 3 in. of inferior mortar, and 3 in. below this was the hard gravel bed of the road, which was traced for a depth of 3 ft.

shallow foundations (Z on plan) were built over Room 1. Their nature and purpose is quite uncertain; they seem to have formed a part of some building over the high-road. It was in the south wall of the early verandah (2 on plan) that the three early buildings were most clearly marked. The wall shown in outline near the west end of the south wall of Room 2 was the north wall of the westernmost block; the south wall of Room 2, as far as the north-east corner of Room 4, was the north wall of the central block, and the continuation of the same wall eastwards formed the north wall of the eastern block. The western and central blocks had a double party wall, as was usual, but the eastern and central blocks appear to have had a single wall only.

The building, as preserved, consisted of a small courtyard with rooms arranged round it and a long corridor giving access to the other rooms. In its last state, at any rate, the building seems to have been used as a dwelling-house, to judge from the hypocausts and pavements that were discovered. The portion of the house to the east of the corridor consisted of a large open space with some small chambers in the south-east corner (16, 17, 18), and a cellar in the south-west corner (15). The west side of the house was occupied by a series of rooms (6, 9, 11, 12, 19, 23, 24) along the west wall, to the east of which were other rooms (10, 13, 14, 20). The rooms along the west side underwent no great alteration during the various reconstructions of the house. Room 6 had clearly marked doorways into Rooms 2 and 9. Room 9 may have been accessible from Room 11, which seems to have been a passage way, and may also have served as a means of access to Room 12 from Room 10. The spaces numbered 4 and 7 were originally one room, the wall dividing them having been inserted later, when 4 and 5 were thrown into the old verandah, 2 and 3 (which now became a corridor). There was no trace in Room 4 of the pavement of old red sandstone slabs which was to be seen in Rooms 7 and 8. It is possible that this pavement was taken up when the dividing wall was built, but, in view of the regular arrangement of the slabs, it may also be supposed that the pavement belongs to a period after the construction of the dividing wall. The discovery beneath it of a worn second brass of Domitian and of a fragment of a figured Samian bowl of the first century A.D. (Dragendorff type 29) is no bar to this supposition. We must regard the objects found under such pavements as perhaps belonging to rubbish brought from some other spot for the purpose of levelling up, not necessarily as testifying to the existence on that very site of buildings of a period to which they themselves belong. The loose earth in which the pottery was found continued for a depth of 1 ft. 6 in. below the slabs; then came the natural gravel upon which the wall foundations rested, and after 3 ft. of this the hard red clay. In any case, that the wall is later is proved by the discovery to the north of it, 4 ft. below the grass level, of another piece of the Samian bowl mentioned above, which

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fitted on to the fragment found under the slabs. The main corridor (8), which runs south for a length of 54 ft. to the courtyard of the house, was similarly paved, and so was the large Room 10 to the west.

Rooms 12 and 19 were originally one room, heated by a hypocaust, which was probably stoked from the west, but owing to the fact that the boundary hedge of the field lies upon the west wall of the house it was not possible to examine this wall with as much care as might be wished. The late dividing wall was built along two rows of *pilae*; some of the north row were left *in situ*, while some of those of the southern row were taken up and used as building material in the wall. No break was left in the wall, so that Room 12 must have ceased to be used as a hypocaust. It is, indeed, fairly clear that the whole arrangement was abandoned, for it seems that the original south wall of Room 13 was destroyed down to below the new floor level, which is nowhere actually fixed by any extant remains of it. A new south wall was also constructed in Room 19, by which the size of Room 23 was somewhat reduced. This is clear from the fact that this wall does not bond into the east wall of this series of rooms; its east end had been reconstructed with shallower foundations. Room 13 also formed a part of the area originally heated, having *pilae* of the same kind under its floor, and being connected with the hypocaust under Room 12 by three openings divided by rectangular piers of masonry, the northernmost of which had disappeared. It could not be ascertained if the openings had arched or flat coverings, or whether Room 13 had doorways into Rooms 10 and 14, as the walls were not preserved to a sufficient height. The south wall of Room 13 had been rebuilt, and no doubt at the same time the low wall was erected across the south-west angle of the room. Room 14 seems to have been an ante-room, paved with old red sandstone slabs, and forming an approach from the corridor to this range of rooms, which were evidently once the most important in the house. We must include with them Room 23, which once contained a mosaic pavement, of which, however, few traces remain, and also Room 24 at the south-west angle. There was a large doorway, 10 ft. wide, between these last two rooms, in which were remains of a pebble concrete floor, no doubt the foundation of the mosaic pavement. Under this floor, which was 3 in. thick, was found some Samian and other pottery, the former including the bottoms of two bowls (Dragendorff 31) with fragmentary marks *ivs/* and */FI*, a fragment of a bowl of form 37 with a decoration of vases (Déchelette 1072), and a piece of glass with the letters */AVD/* in relief.

The use of the space to the east of the corridor is very uncertain, and it is not clear whether the northern portion of it was roofed or not, though it seems so improbable that we have marked it 'yard' on the plan. The rooms or spaces in the south-east angle are unimportant, but the south-west corner contained a remarkable cellar (15), of a type not hitherto met with at Caerwent, but resembling

rather closely the treasure-chamber in the *praetorium* of a camp (pl. LXII, figs. 2 and 3). It was approached from the north by a flight of five steps, each 12 in. wide, giving a total descent of 4 ft. 2 in. The cellar itself measured 12 ft. 9 in. by 8 ft. 9 in., and was floored with good concrete of pebbles and fragments of brick and lime $7\frac{1}{2}$ in. thick, resting upon the natural clay bottom, upon which the side walls also rested. The walls, 5 ft. in height, were very well built in the usual style of construction of small blocks of limestone, and the marks of the tools used in pointing them could still be seen in the mortar. At the top the walls were flat, no doubt in order to carry a wooden floor. The cellar was lighted by a small window at the south end, 4 ft. wide inside, narrowing to 1 ft. 6 in. outside, but this was blocked up in later Roman times. Some alterations seem to have been made at the entrance; thus at *c* there are distinct traces of there having once been a wall across the opening, and it is possible that the cellar was originally a water cistern, or that it was entered by a trap-door in the floor above. It also seems clear that at *d* the western face of the wall has been added later, and that the narrow portion to the east, not at right angles to the rest, is earlier in date. The space to the east of the entrance rather suggests that it was at one time intended that the steps should go down parallel to the north wall of the cellar. In this space was found a second brass of Nerva,¹ in good condition, 4 ft. 6 in. from the grass level. The cellar was filled up with a large quantity of old red sandstone roofing-tiles, and amongst the débris a number of coins of Carausius, a fragment of a stone mould for casting metal objects, and the base and part of the drum of a small column (fig. 10, no. 1) were found.

The corridor (8) originally led into the centre of the north ambulatory surrounding the small courtyard,² which was drained by a stone drain crossing it diagonally, and then running due south across the south ambulatory and through the eastern portion of Room 25. The south ambulatory had traces of pitching and of another drain running along its south wall, the use of which was not altogether clear. The courtyard was paved with slabs of old red sandstone, beneath which a little common pottery was found. In the last state of the house this courtyard was much encroached upon. A room was taken out of it in the north-west angle, and alterations were made on the east side, where the dates of the various walls were very difficult to distinguish. It seems clear, however, that the cellar (15) was not a part of the earliest construction, inasmuch as the walls south of it must originally have continued northwards. The rooms to the east of the courtyard (21-22) were also added later, and seem to have been of some importance. In Room 21 some brightly coloured wall plaster, all in small fragments,

¹ Nerva, *Concordia exercituum*. Cohen, no. 71 (1st ed.), A.D. 96.

² The middle one of the three parallel walls at *a*, which is the earliest in date, seems to belong to a period before the construction of the courtyard; with what it is connected is quite uncertain.



Fig. 1

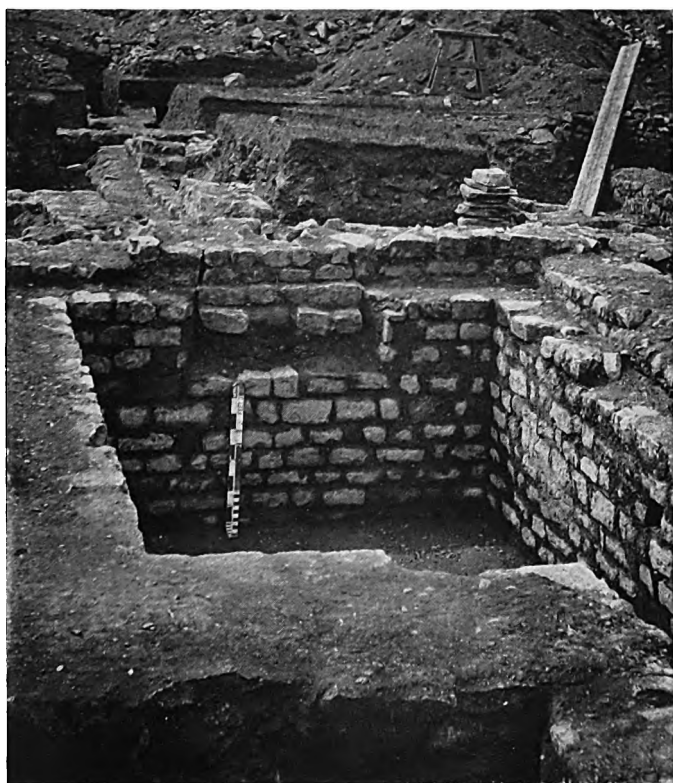


Fig. 2



Fig. 3

Fig. 1. House no. XVI s, looking North

Fig. 2. Cellar, House no. XV s, looking South

Fig. 3. Cellar, House no. XV s, looking North

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was found, and the quarter-round moulding and a little of the plaster were preserved *in situ* on the south wall of the room. The floor had been of a fine pattern mosaic, but the greater part of this had been removed by previous excavators, who had only left the border of old red sandstone *tesserae*. A portion of it, however, had subsided considerably, having been laid over an old rubbish

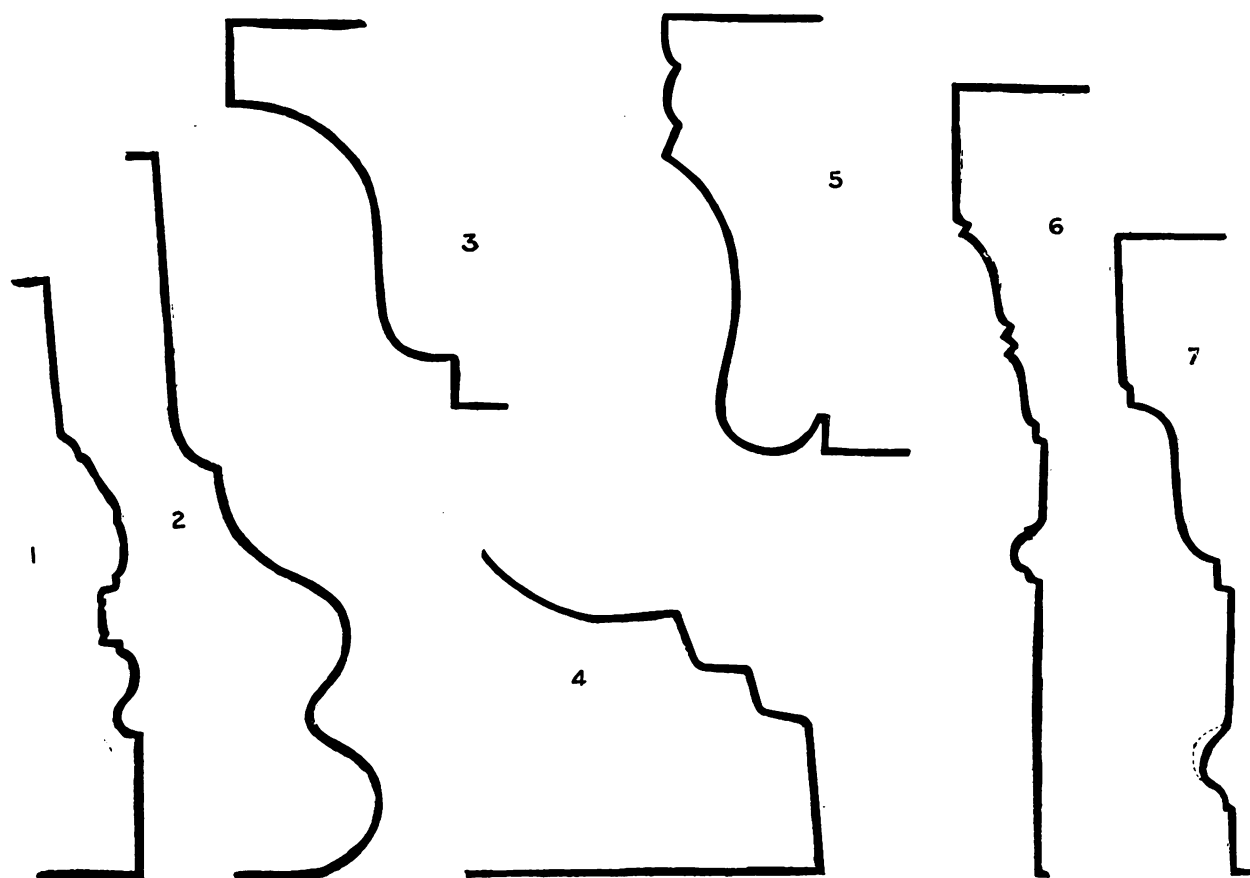


Fig. 10. Caerwent architectural fragments, 1910. $\frac{1}{16}$.

pit. This part of the pavement has been taken up, and is now in the local museum.

The large pit under the pavement was found to contain the following:

In the first layer, just under the pavement, a few oyster shells, fragments of common pottery, and a coin of Carausius in mint condition.

From 10 ft. 6 in. to 11 ft. 6 in. Samian potter's mark SENIA . M.

From 11 ft. 6 in. to 12 ft. 6 in. Samian potters' marks /MARI/ and CERTUSE.

At 15 ft. from the grass level was a burnt layer from 2 to 3 in. thick, and no more finds were made until at 18 ft. down a quantity of common pottery occurred. From this point downwards the filling of the pit was quite black, and

consisted chiefly of charcoal and ashes. At 20 ft. down a bone die, with its sides numbered from one to six, was found. There was a large quantity of pottery from here downwards, and when this had been washed it was possible to restore completely three pots, a Samian bowl of shape 18 with an illegible potter's mark, a large *mortarium* with rather flat rim, and a plain bowl of yellowish pottery with twisted handles. The pottery was nearly all on the north side of the pit, as if it had been thrown in from the south side, and had rolled down to the bottom. It was noticed that the rubbish was in layers which sloped downwards from the south to the north side of the pit. The bottom of the pit, which had been sunk into the sandstone rock, was 23 ft. below the grass level. The pit was evidently the earliest work on the site, as all the walls round it had sunk into it. The two walls which run eastwards from the easternmost of the three parallel walls at *a* had met the same fate as the others, but they were preserved further east under the pavement. The cap and part of the drum of a small freestone column (fig. 10, no. 6) and a wall tile, intended to keep the plaster off the wall so as to allow air or heat to circulate between it and the wall, were found in Room 21. The next room to the south, 22, was heated by a channelled hypocaust, and also had a mosaic pavement. Its east wall rests partly upon a threshold which formed an entrance to the house before the Rooms 21 and 22 were built. The threshold was formed of sandstone blocks, and was 9 ft. in width, with a pier or pillar in the middle. The hypocaust was stoked from a rectangular stokehole on the south, projecting slightly into Room 26, which must have been a mere wood shed, and the same may be said of Room 27 to the south again.

The coins found in House no. XV s range from the period of Postumus to that of Valens, with the exception of a second brass of Nero and two second brasses of Antoninus Pius found close to the west wall of Room 21. That the last-mentioned coins have no value as to date was shown by the discovery close to them of a second brass of Diocletian in good condition, and by the finding of the coin of Carausius in the pit under Room 21. A line of water-pipes was found to have existed on each side of the street to the east of House no. XV s; the line on the western edge lay 1 ft. 9 in. from the east wall of the house, and 2 ft. 9 in. to 3 ft. below grass level. Three pipe collars were found *in situ*, the first two 5 ft. 6 in. apart, and the third 26 ft. further to the south, the line having been disturbed by the later burial referred to below. On the east side of the street four pipe collars were found close to the eastern edge of the street drain, so that there were two lines of pipes in the street, or possibly the line may have crossed from the east to the west side, as the collars on the east side were to the north of those on the west. To the east of Room 3 the upper level of the road was found 2 ft. 3 in. below the modern grass level; there was a surface bed of mortar and concrete 2 in. thick, and then 1 ft. of gravel. Below this was an earlier road level, a well-

pitched surface on a level with the lowest of the steps which originally led out to the street.

A curious discovery was made in one of the rooms of House no. XV s, in which a huge piece of bone was found a couple of feet under the surface. This proved to be a portion of a femur of a large whale. Other portions of the same skeleton were found in House no. XVI s later, and fragments also were found, ten years ago, in House no. II s to the south. The femur measures in its largest circumference 3 ft. 9 in.; diameter from 9 to 15 in.

HOUSE NO. XVI s.

House no. XVI s occupies the north-west corner of the second *insula* from the west on the south side of the high-road. It lies to the east of House no. XV s, and on the opposite side of the street. What we have called one house is made up of several parts; there were originally three buildings with frontages to the main road, and narrow alley-ways between them (pl. LXII, fig. 1). These, like the similar buildings further east as well as those on the site of House no. XV s, were shops. The commercial quarter of the town was, as we should expect, situated along the high-road (cf. *Archaeologia*, lxii, pl. 1 for shops on the north side of it east of the forum), while the large dwelling-houses were in more remote parts. All had been much altered in Roman times, and the southern portion, at least, seems to have been converted so as to form one building. Over the Roman work there were remains of still later buildings, the date of which it was not possible to determine accurately, as no objects of post-Roman date were discovered. For convenience of description we have called the three buildings respectively the western, central, and eastern portions of House no. XVI s. Four periods may be distinguished in the history of these buildings, and they will be taken in chronological order.

First Period (fig. 11). The western portion consisted of one large room (1), measuring 22 ft. 6 in. from north to south, but its width was not determinable, as no trace of its west wall could be found. The main road was found just to the north of it; the surface was formed of small stones and gravel well rammed together. The road bed was 1 ft. 6 in. thick, and the width of the road was here considerable, the frontage line being set back very much more than in later times. This had indeed been the case with the whole row of buildings which have been excavated on the south side of the main road. The central portion was composed of four rooms (2-5); 2 and 3 on the north were small, while 4 and 5 were large rooms occupying the whole width of the block.

Room 4 was floored with a good brick concrete, some 4 ft. 3 in. below the grass level, which was only preserved in the south-west corner. The rest of the room was occupied by a group of furnaces, much destroyed and indefinite in

plan. Nothing was found to throw any light upon their origin or use. Room 5 had a floor of large old red sandstone *tesserae* on a bed of concrete $3\frac{1}{2}$ in. thick; this floor was at the same level as the concrete in the south-west angle of Room 4.

The eastern block consisted of a large room, 7 on plan, 69 ft. 6 in. long by 23 ft. 3 in. wide, which was apparently roofed, inasmuch as old red sandstone roofing-tiles were found scattered all over the floor level; in the north-east and south-west angles were small subdivisions (6 and 8), which were, no doubt, covered by the main roof of the block, as were also the two Rooms 9 and 9A to the south.

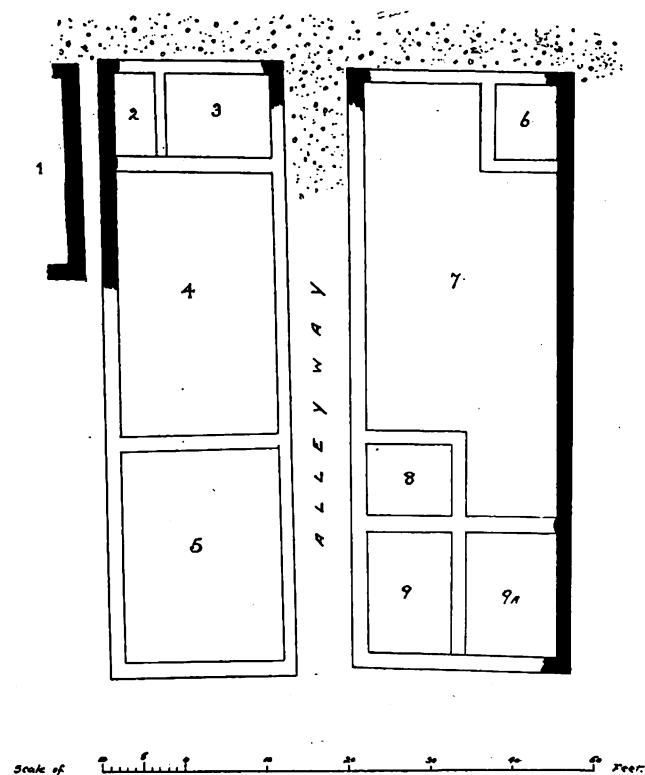


Fig. 11. House no. XVI s: First Period.



Fig. 12. Large jar, House no. XVI s. About $\frac{1}{2}$.

A small iron tool, with a handle of red-deer horn, was found close to the south wall of Room 6. The front wall of the eastern block still had plaster *in situ* on the side towards the street. There was a skirting 11 in. high, white in colour, and above this were two coats of plaster, the first coloured red with much yellow splashing, the second $\frac{3}{8}$ in. thick, darker red in colour, with less yellow on it. This wall was continued eastwards and blocked the narrow space between the eastern block and House no. XVIII s. To the south of the eastern and central blocks was good hard pitching, 6 ft. from the grass level, made up of yellow sandstone blocks with gravel rammed between them, showing considerable signs of wear. Sunk in this pitching near the south-west corner of the eastern

block was a large grey jar, 18 in. high (fig. 12), ornamented with an incised wavy pattern; its rim was just above the pitching. Nothing was found in the jar, which was covered with a rough stone.

Second Period (fig. 13). No alterations seem to have been made in the western block; but shops (10-12) were placed in front of both the central and the eastern blocks, occupying the whole frontage of the buildings and encroaching considerably upon the street. The shops had entrances at the front and the sides. The

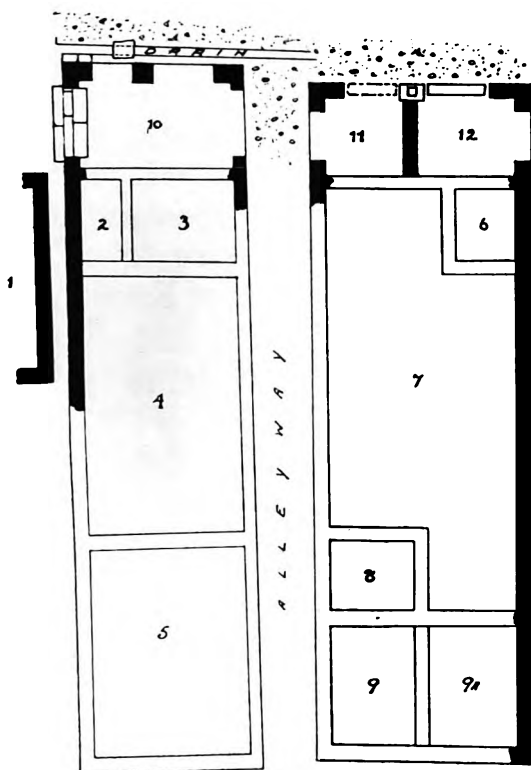


Fig. 13. House no. XVI s: Second Period.

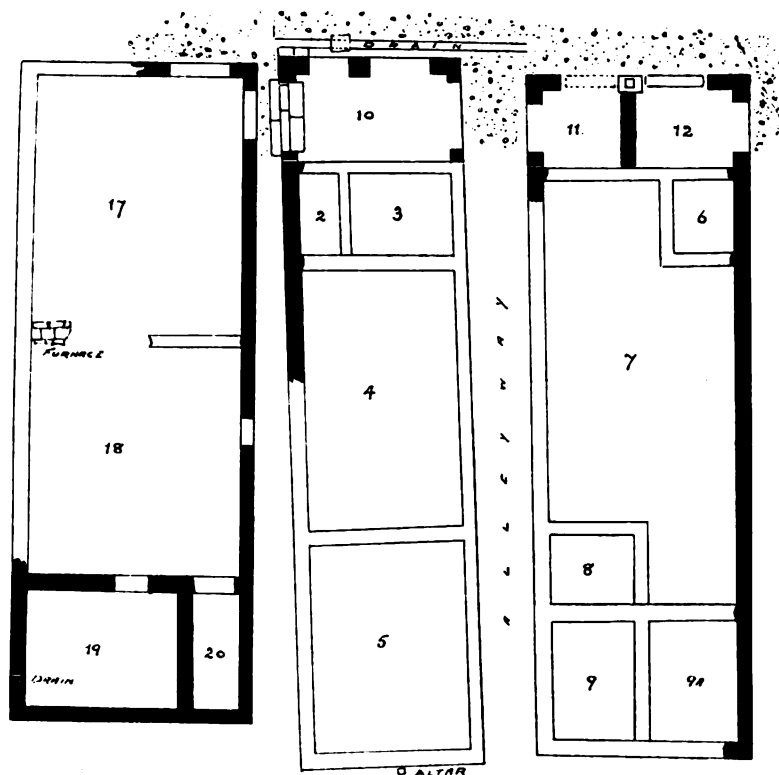


Fig. 14. House no. XVI s: Third Period.

one in front of the central block had a double opening towards the street, divided by a pillar in the centre, and giving a width of 5 ft. on the west and 7 ft. on the east. On the west was a flight of three well-worn steps of yellow sandstone, 9 ft. wide; the steps were 14 in. on the tread, and each had a rise of 6 in. The entrance on the east side was on the level, and was 8 ft. 6 in. wide. Very probably there was no entrance from the front, which may have been occupied by the woodwork of the shop front. In front of the eastern block there were two shops (11 and 12), entered from the front and the east and west sides respectively.

Room 12 had the front threshold stone *in situ*, with a large stone to the west of it which evidently carried the wooden post to which the doors of both shops were probably hung. The threshold stone was in one slab, 7 ft. long and 1 ft. 3 in. wide; on it was found a large iron key, which, from its pattern, may be mediaeval. Probably both rooms had similar thresholds, but that of Room 11 had been removed. The floor of the rooms, as preserved, was a rough gravel pitching at the level of the threshold. That these shops belong to the second, and not the first period, seems clear from the fact that they encroach upon the early frontage line, and also from the fact that the pillars on the south of their side entrances have not such good foundations, and are nowhere bonded into the front walls of the buildings; indeed, at the north-west angle of the central block the original quoins have been taken out and the pillar added, its line being an inch or two further west than the west wall of Room 3. We may probably assign to this period the earlier street drain which lies immediately to the north of the façade of the shops, and which follows the frontage line of all the other houses so far excavated on the south side of the main street. In the drain were found, besides a large quantity of common red and black pottery, fragments of Samian pottery, all of shape 33, bearing the following potters' marks:—

SEVERIAN . M

SATVRN

CELSIAN F.

Third Period (fig. 14). The western block was suppressed and superseded by a building similar to the other two blocks with a somewhat wider frontage. There were two rooms at the southern end of the block, 19 and 20, but the only other wall, which may have belonged to the third period, was the one to the north of the door into Room 18. This appears to have never gone right across the block, as there was a furnace close to the west wall in the line of the cross wall. At the point where this cross wall leaves the east wall of the block, we may note that the footing falls two courses to the south owing to the slope of the ground. The front of the block seems to have been used as a shop or shops, but all traces of the inner walls have been destroyed by the alterations of the fourth period. There was a doorway from Room 18 into the narrow alley to the east of it, the threshold stone of which was a block of yellow sandstone, with a groove 1 ft. 2 in. long close to its outer edge. Rooms 19 and 20 were accessible from Room 18, and in the south-east angle of the former was a pit partly underlying the walls of the house, and assignable to either the first or second period. In it was found, at 3 ft. down, a coin of Marcia Otacilia, A.D. 244-9, in good condition, with the reverse Pudicitia Aug. (Cohen 60), and at 4 ft. down a small black jar with the neck and handle broken off. The concrete floor of Room 20, as preserved, probably belongs to the fourth period, for below its level in the west wall of the room was a drain aperture 6 in. by 8 in., which had no connecting drain under

the floor. The drain was most probably destroyed when the floor was laid. The later street drain in front of the east block, overlying the earlier one, has to be assigned to this period, as the wall which cuts across it seems to belong to the fourth period. It was built of rough building stones with old red sandstone slabs at the bottom, and covered with rough slabs of stone, the drain being from 6 to 8 in. square. The construction of this building did away with the *raison d'être* of the steps on the west side of the shop (10) attached to the central block, and traces of a later floor of gravel resting on mortar and stones were found on a level with the top step leading into the doorway of the western block. The south portion of the top step had been removed and ordinary building stones put in its place. Under this level and all along the narrow space between the western and central blocks numerous fragments of pottery were found. Close to the steps was a plain Samian bowl (Dragendorff 31) with milled decoration round the interior of the bottom; the stamp was illegible. Further south a figured bowl (Dragendorff 37) was found, with the following decorations: Bear (Déchelette, ii. 817), Triton (*ibid.* 29), Centaur (like *ibid.* 434). Also the stamps /AILL F, MOXIVS M, and IIIIMI from plain bowls whose form cannot be determined.

The central and eastern blocks underwent practically no modification in this period. To the south of the central block a small yellow sandstone altar bearing the inscription---

DEO
MARTI
OCELO
AEL · AGVS
TINVSOP
V · S · L · M

was found standing *in situ*, its back against the south wall of the block (pl. LIX, fig. 2). The sculptor seems to have made mistakes in spelling, the first v in AVGVS being omitted in the fourth line, and an s had been cut in place of the v in the fifth line and afterwards altered. It is impossible to say whether the letters OP in the fifth line stand for OP(TIO) or O(PERI) P(RAEFECTUS). The title OCELUS for Mars also occurs on the pedestal discovered in 1904,¹ and on an altar at Carlisle.² It appears as if this was the British equivalent of LENUS, a title of Mars not uncommon on the Rhine. A coin of Tetricus and a worn first brass of Antoninus Pius were found close to the altar. Under the slab paving to the south of the altar a small toy lamp was found; it is exactly similar to those found in the forum in 1907 and 1909.³ The slabs belong to the period after the altar, as they were laid at such a level that the altar was buried by them.

¹ *Archaeologia*, vol. lix, p. 293, fig. 3.

² *Classical Review*, 1894, p. 228.

³ *Archaeologia*, vol. lxi, p. 582.

In either the second or third period the southern portion of the eastern block was reconstructed; the north and east walls of Room 9 were suppressed (and probably Room 8 also). A part of Room 9A was taken and Room 8A constructed. It had a dado of dark red plaster with yellow splashes, which began about 2 ft. above the level of the pitching alluded to above. A narrow room (8B), all that remained of Room 10, was left to the east of it.

Fourth Period. The rooms (13-17) in the northern portion of the western block were added at this time. All the rooms had pebble-concrete floors. Room 13 was accessible from Room 14, and also from the large space (18) which occupied the centre of the block. Whether Room 13 was a shop is doubtful, as its north wall was insufficiently preserved; but it is possible that Room 14 was used as such, the wide doorways being blocked up later. In the south-west angle of Room 13 a small black pear-shaped pot was found, containing six coins of Carausius and four of Allectus, all in mint condition.¹ Room 15 was accessible from the space 18, and also had a doorway into Room 16. That these rooms were an addition is clear from the fact that the south wall of Room 16 partly blocks the doorway in the east wall of the space 18, the doorway then being completely built up, and at this time the alley to the east went out of use. To the south of the block another room (21) was added in connexion with the changes which were made in the whole of the southern portion of these buildings.

¹ As coins of these two emperors of Britain are of special interest, some further account of this little hoard may be acceptable. They seem to have been but recently struck when deposited, and appear never to have been in circulation. Though several are of the *Pax Augusti* type, no two are exactly alike. They may be described as follows, the numbers quoted from Cohen being from his first edition:

CARAUSIUS. A.D. 287-93. Radiated bust to right, with paludimentum.

1. Cohen 164*. *Ob.* IMP. C. CARAVSIVS. P. AVG. (not IMP. CARAVSIVS as in Cohen). *Rv.* PAX. AVG. Peace to left, with olive branch and upright sceptre. In field s. p.
2. „ 164*. The same, but details differ, and in exergue c (or g).
3. „ 166. *Ob.* IMP. CARAVSIVS. P. F. AVG. *Rv.* Same as above, but no letters in field.
4. „ 167. *Ob.* IMP. C. CARAVSIVS. P. F. AVG. *Rv.* Same as above, but s p in field.
5. „ 187. *Ob.* The same. *Rv.* PAX. AVGGG. Peace to left, with transverse sceptre. In field s. p. In exergue MLXXI, London mint.
6. „ 188*. *Ob.* IMP. C. CARAVSIVS. P. F. IN. AVG. (not P. F. I. AVG. as in Cohen). *Rv.* PAX. AVGGG. Peace to left, with upright sceptre. Partially silvered. In field s. p. In exergue c (or g).

ALLECTUS. A.D. 294-7. Radiated bust to right.

7. Cohen 33. *Ob.* IMP. C. ALLECTVS. P. F. AVG. *Rv.* PAX. AVG. Peace to left, holding olive branch and transverse sceptre. In field s. p. In exergue M. L. (London mint). Traces of silver plating.
8. „ 33. The same, but c in exergue.
9. „ 22. *Rv.* LAETITIA. AVG. Joy to left, holding a crown and anchor. In field s. p. In exergue c.
10. „ 16*. IMP. C. ALLECTVS. P. AVG. *Rv.* FIDES. MILI. (no T). Faith to left, holding two military ensigns. In field s. p. In exergue c.

Turning to the central block, we find that the entrance to Room 14 in the western block having been suppressed, the door leading westwards from Room 10 shared the same fate. In fact, a new west wall was built for the whole of the northern part of the block, overlying and superseding the former one, and in connexion with it a new south wall to Room 10 was built. Rooms 2 and 3 were suppressed altogether, and the southern portion of them thrown into Room 4, which was now repaved with slabs of old red sandstone. The new south wall of Room 10 was carried as far as the east wall of the western block, thus blocking up the alley between this and the central block. Some large blocks of sandstone were laid in the alley-way to serve as a foundation for it. Room 4 received a further enlargement at the expense of Room 5, the north wall of the latter being suppressed, and a new wall constructed a little further south. The doorway in this wall had two blocks of sandstone for its threshold, and the stop for the door was formed, not out of the threshold stone itself as was usual, but by small stones set on edge in mortar. A square hearth was subsequently built in Room 4 in front of this doorway. The size of Room 5 was further diminished by the construction of two rooms, 22 and 23, over the southern portion of the central block, projecting also over the alley-ways to the east and west of it, and to the south of the south wall of the block, so as to align with the south wall of Room 21. To these must be added two other rooms (24 and 25), constructed at the expense of the southern portion of the eastern block; so that there was in the fourth period a range of five rooms on the south connecting the three blocks together. Two small rooms (26 and 27) were also formed to the north of 24 and 25. Of these rooms, 22 had a floor of old red sandstone slabs preserved over the earlier west wall of Room 5, and a concrete floor elsewhere; Room 23 also had an old red sandstone slab floor. In the other rooms no floors were preserved, and the walls were not standing high enough to show the positions of the doorways; Room 26, however, had a threshold leading into the eastern portion of Room 7. A wall was built to form a corridor (28) in the western portion of Room 7, and the north wall of this room was rebuilt a little further south. In the south-west angle of Room 7 the iron sheath of a wooden spade was found (pl. LXI, fig. 1).

We may perhaps assign to the same period the blocking of the openings into the shop 11, which can henceforth have been accessible only from Room 12; to the same period may belong the wall projecting north across the street. The rebuilding of the northern portion of the east wall of the eastern block was probably done at this time: large yellow sandstone blocks 1 ft. to 1 ft. 6 in. in thickness were laid right across the wall, projecting from 3 to 9 in. on each side of it; above these the wall was built with squared blocks of limestone of a larger size than was generally used in the ordinary walling.

Fifth or post-Roman Period. To this we may assign the various walls which

seem to intrude upon the Roman buildings and to bear no relation to their plan. Thus a rectangular chamber, measuring 25 ft. 6 in. by 12 ft., was constructed over the west wall of the western block, its west wall overlying the street drain and rendering it entirely useless. The entrance was towards the north, but this was blocked, at a still later period, by another building, in which we may note a doorway at A. A little further north were found two chamfered arch blocks, without doubt mediaeval. Further north, over Room 13, are two walls with a rounded angle towards the south-east. To the east again we meet with a later wall built across the eastern portion of the shop numbered 10, blocking it up almost entirely. There was, too, some later walling across Room 4, extending eastward over the alley-way, and another late wall is to be found running eastwards from the cross wall between the shops 11 and 12, and forming a rounded angle in front of House no. XVIII s.

HOUSE NO. XVII s.

Of this building there is hardly anything to be said, as it was almost entirely destroyed by late burials. It was situated on the east side of the street which runs between Houses nos. XV s and XVI s, to the south of the latter, and was separated from it by a yard. This yard was thoroughly trenched, but nothing of interest was found in it. The northern part of the house consisted of two rooms (1 and 2), the former of which was entered from the yard to the north by a doorway some 6 ft. in width, and the threshold stone was preserved just inside the room. Room 2 was probably accessible from Room 1. To the south of these rooms was another portion with a distinct north wall, but so much of it was destroyed that nothing could be made of it. It was not thought worth while to attempt to excavate it more completely, and by Viscount Tredegar's wish, in order to avoid disturbing these burials unnecessarily, no further work was done to the east of it with the exception of a trench along the west side of the churchyard wall, in which traces of two walls were discovered, so that the space to the south of Houses nos. XVIII s—XXI s as far as the street running east and west (which probably contained no buildings of great importance) was not investigated. It was evident that the whole of this area was occupied by a burial ground almost certainly of post-Roman date. The bodies had been buried from above after the Roman walls had been covered, for in many cases the walls had been completely taken out in the digging of the graves. The same thing happens to-day in the churchyard of Caerwent when graves have to be dug. The skeletons were all lying with the heads towards the west, and had been buried without coffins, and apparently without clothes or other objects, except that an iron spear-head was found close to one of the skeletons, and this is said by the British Museum authorities to be of a late-Celtic type. Some of the skulls have been

examined by Prof. Macalister, of Cambridge, who says that they are not Saxon, but of the later Romano-British type, all of one race, and like the skulls that are got from pre-Saxon or early Saxon times in places where the Saxon admixture is small or none.

HOUSE NO. XVIII s.

House no. XVIII s occupies a position fronting on the main street to the east of House no. XVI s, and separated from it by a space of 1 ft. 6 in. The frontage line of this house and the original frontage line of that next to the east is the same as that of the earliest period of House no. XVI s. In front of House no. XVIII s no shops had been added, but there were two bases, which evidently had carried columns or posts in line with the frontage line of the shops to the west, so that this house seems to have had a verandah similar to that of House no. XV s. Between the bases and the front wall of the house a rough hearth had been placed at a late date, and close by a quantity of iron slag was found. At 1 ft. 6 in. below the pitching, which formed the pavement here, was a hard bed of clinkers, and 1 ft. 6 in. below this a hard layer of rammed gravel 8 in. thick, in which were some fragments of Samian ware of shape 29.

The entrance to the house was in the north wall of Room 1, which from the remains of the furnaces found seems to have been used as a workshop. In this room were found two bars of lead 6 in. long, $1\frac{1}{2}$ in. wide, and $\frac{1}{2}$ in. thick, together with an ornamental piece, probably the lid of a box (fig. 15), and a circular piece 4 in. in diameter. A small iron tool with a handle of red-deer horn and an iron key were also found (pl. LXI, fig. 4, nos. 2 and 3). Room 1 had a later floor of rough pitching and slabs of old red sandstone over the remains of the furnaces, on which was found a coin of Valens. The threshold of the doorway from Room 1 into Room 2 had been displaced, and was found in the north-east angle of the latter room. The stone was 4 ft. by 1 ft. 6 in. by 6 in., and had a groove at each end. Two steps led down into Room 2, the floor of which was 14 in. below that of Room 1, and the second step had been formed out of part of the drum of a column. Close to the doorway on the west side of the room was a hearth 2 ft. 6 in. square, built of small red tiles, with similar tiles on edge as a border. In the south-west corner of the room was a furnace built of large blocks of stone; one of the outer blocks

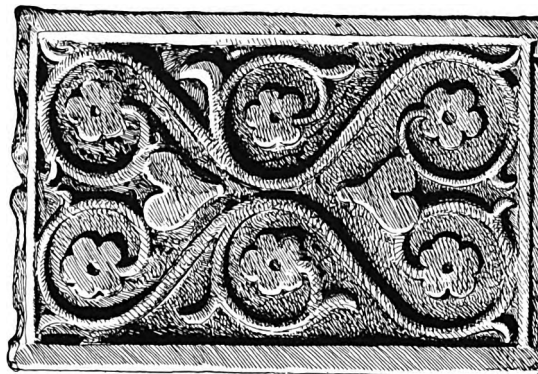


Fig. 15. Ornamental lead panel from Room 1, House no. XVIII s. $\frac{1}{2}$.

at the east end was found to be moulded (fig. 10, no. 3). All trace of the doorway into Room 3 was gone, as this wall had been suppressed when the late furnace was built. In the north-west angle of Room 3 was an irregularly shaped pit, and the north wall of the room was partly built over it. Two feet from the grass level a second brass of Hadrian in good condition was found, and at 4 ft. down a silver coin of Vespasian and a bronze one of Gordianus Pius were found.

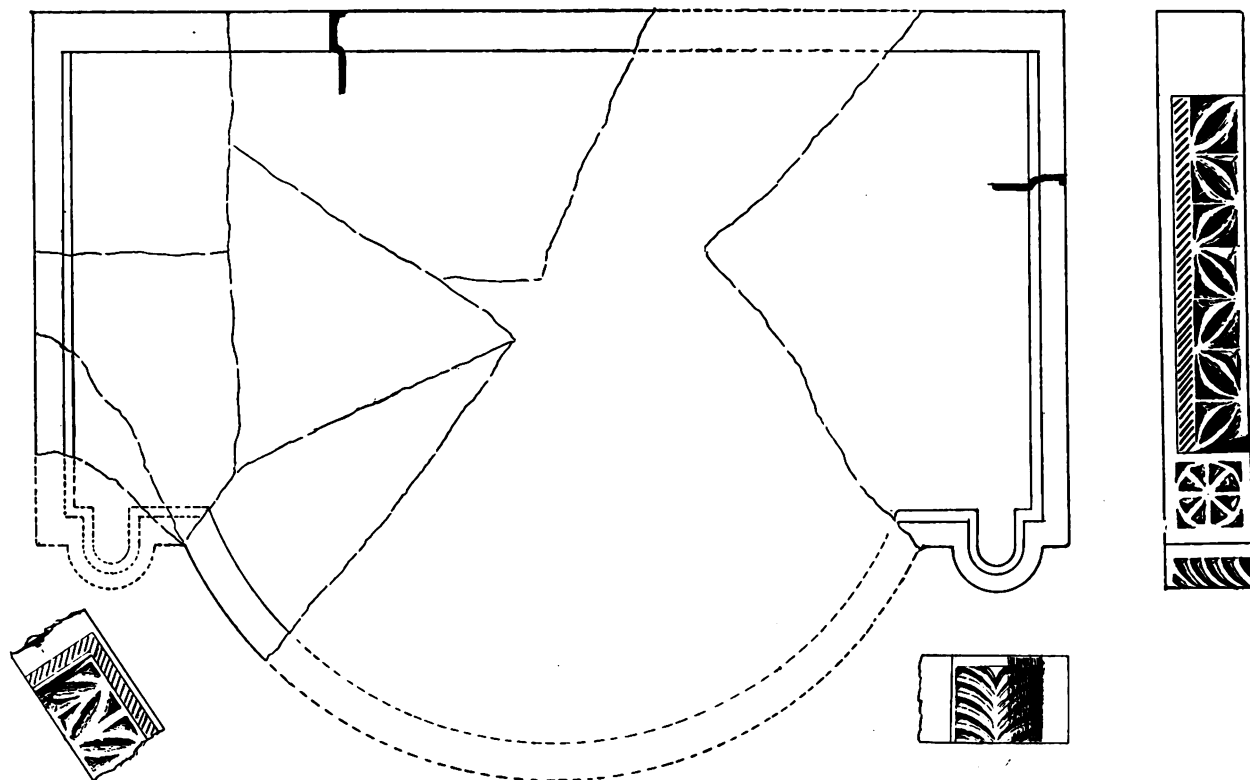


Fig. 16. House no. XVIII s: Carved slab. $\frac{1}{8}$. F. K. del.

At this depth also was a black pear-shaped cinerary urn, covered with a roofing-tile and full of burnt bones. Just below this were two fragments of Samian ware; one of shape 33 with the mark CALETINI, and the other of shape 31 with the mark SACRILLI. M. At 8 ft. 6 in. down some fragments, making nearly half of a bowl of shape 37 (pl. LVIII, fig. 2), with the following decorations in metopes and panels, were found:

Apollo	Déchelette, ii. 52.
Bust of lioness	Not in Déchelette.
Man fighting a lion	Déchelette, ii. 624.
Cock	„ 1026 and 1038.
Baluster pillar	„ 1092.

The bottom of the pit, of hard natural gravel, was reached 10 ft. from the grass level.

Room 3 had a doorway in its east wall which led into the space to the south of House no. XX s. The threshold of the door was formed out of the drum of a column, and there were two steps down on to a pitched pavement outside. The south wall of Room 3 was too much destroyed to show where the door into Room 4 had been, and no trace of a door from Room 4 into Room 5 could be found. Several fragments of a carved slab of stone were found scattered over the north-east portion of the room about 2 ft. from the surface. There is 'chip' carving on the sides and semicircular front of the slab (fig. 16), while the top is dished. The straight joints in the walls in the north-west and south-west corners of Room 5 show this to be a later addition. It was entered by a doorway in its north-west corner, and in the south wall of the room the base and part of the drum of a column were used as building material (fig. 10, no. 2). No floor was preserved in the room.

HOUSE NO. XX s.

House no. XX s, to the east of House no. XVIII s, is very similar in plan. Originally its front wall was in the same line as that of House no. XVIII s, but later a room (1), perhaps a shop, was added encroaching over the street. Several alterations had been made in the house, and the only floors preserved were a few traces of old red sandstone slab-paving in the large room in the centre of the house, and some red tile-paving in the south-west corner of Room 9. The tiles measure $16\frac{1}{2}$ in. by $10\frac{1}{2}$ in. by $\frac{5}{8}$ in. thick, and lying on them was the top stone of a quern in perfect condition. Under the tiles several fragments of Samian ware of shape 37 were found, some of the pieces being from a very small figured bowl.

Room 1, which encroaches on the street, seems to have had wide doorways in its north and east walls; the one on the east side had been blocked up, and the west wall was too much destroyed to show any trace of an entrance. The front had a large threshold, which had been partly built over, and the quoin at the north-east angle of the building had a well-worked splayed plinth. In the south-east corner of Room 1 a black pear-shaped pot was found.

The doorway in the north wall of Room 2 had been half blocked up, probably when Room 1 was added; no trace of any entrance from Room 2 to the rest of the house could be found, nor was it possible to determine where the back portion was entered. Room 1 was probably a shop with a small store (Room 2) behind it. The central portion of the house, as found, was one large room having a small room (3) at the north, and two rooms (7 and 8) on the south opening out of it. The arrangement of this part of the house had, however, been very different at some earlier time. Room 5 had first of all been formed, and this had

been destroyed in the construction of Rooms 4 and 6, and these again were removed, leaving the building in the state in which we found it. An alteration had also taken place in Rooms 7 and 8, the division wall being pulled down and rebuilt a little further to the west. A small open hearth was preserved over Room 6, and in the south-west corner of the large central room and the north-east corner of Room 8 some white-coloured plaster was *in situ* on the wall. The furnace at the south-east corner of Room 3 must be of very late construction, as the quoin of the wall had been pulled down in building it. It was one of the usual type, of blocks of sandstone. Room 9 was first of all added, as shown

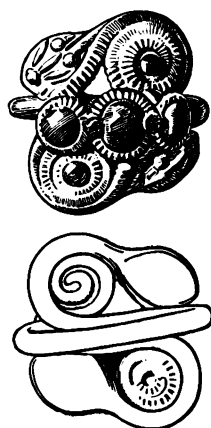


Fig. 17. Lead ring from Room 3, House no. XX s. ¹.

by the straight joints in its east and west walls, and afterwards suppressed when the doorway into House no. XVIII s was made. The north wall of Room 9 runs as far as the west wall of House no. XVIII s, so that probably Rooms 3 and 4 of that house are late, while Room 5 was a still later addition. Very little pottery was found in the house, but in the central room two small altars were found; one, of old red sandstone, was complete, and measured 12 in. high, 6 in. wide, and 4 in. thick; the other was of yellow sandstone, broken and slightly larger—neither had any inscription. In this room, besides the lead ring (fig. 17), several perfect millstones and a large water-worn stone with an iron ring leaded into it, probably a weight, were found. The coins found included a first brass of Hadrian in good condition, 6 ft. deep and close to an early foundation; a silver coin of Julia Domna, with the reverse Pudicitia (Cohen 89), 3 ft. down on the west side of the large room; a worn second brass of Maximianus and several coins of the family of Constantine. Under the slabs in Room 3 some pottery was found, including some fragments of pot covers, and on the north side of Room 9, 6 ft. from the grass level, several fragments of Samian ware of shape 29 were found.

HOUSES NOS. XIX s AND XXI s.

Houses nos. XIX s and XXI s occupy the site of one large earlier building, a number of the walls of which could be traced under the floors of the later work.¹ In this case, perhaps it will be advisable to take the later buildings first.

House no. XIX s consisted of a courtyard, well paved with old red sandstone slabs, and bounded on the north, east, and south sides by the rooms of

¹ The early walls under House no. XX s may possibly have connected with those under Houses nos. XIX s and XXI s to form one large courtyard house, but we have no definite connexion between Houses nos. XX s and XXI s, and no fragments of coloured plaster or mosaic paving were found in House no. XX s.

the house, and on the west side by House no. XXI s. The paving of the courtyard was uneven and much broken up; it was only 2 ft. 6 in. below the grass surface. The rooms south of the courtyard seem to have been most important, and call for most description. Rooms 8, 9, 11, and 12¹ were apparently narrow corridors, and 8 and 11 at least were paved with slabs of old red sandstone, regularly laid. The paving of Room 11 had been repaired with roofing-tiles. The doorway from Room 9 to Room 11 was well preserved, as also was the north side of the door between Rooms 8 and 9. The central room (10) had a concrete floor, but the walls were too much destroyed to show the positions of the doorways. On the north side of the room an iron axe-head, with part of the wood shaft still in the socket, was found (pl. LXI, fig. 2, no. 2). In the south-east corner of Room 12 an iron spear-head, 22½ in. long and 2¼ in. wide, a small pair of iron shears (pl. LXI, fig. 4, no. 1), and a barbed arrow-head in perfect condition were found. In this room also three lead discs, 1½ in. in diameter, with holes in their centres were found. Just outside the south wall of Room 12, and 3 ft. down, was a fragment of a Samian pot of shape 33, with the mark ADVOCIS . M, and also a number of fragments of coloured plaster. At the east end of Room 9 several quarter-circle bricks were found, similar to those found built into the north wall of the nave of the basilica.² Very little can be said of the other rooms of the house, as all the walls were destroyed to foundation level. The threshold of the doorway between Rooms 6 and 7 was preserved, and it blocked up the stone gutter belonging to the earlier building. In Rooms 2, 3, and 4 there were small recesses in the walls, which had been carefully formed and plastered; the plaster had been coloured a bright yellow. At the south side of the courtyard, close to the north wall of Room 7, a quantity of iron slag was found, together with a ladle in which it had evidently been melted, as the pieces were all of the same shape. A large number of fragments of red baked tiles were found in and about the house; probably the building was roofed with these, and not with old red sandstone tiles.

House no. XXI s is similar in plan to House no. XX s, which it adjoins, but its front wall is in line with the latest frontage line of that house. The eastern rooms (3 and 6) are later additions, as shown by the straight joints in the walls. Built into the north-west angle of Room 1 was the base of a column, which probably was *in situ* and formed part of the verandah in front of the early building. On the east side of Room 1 the bronze arm of a balance was found 5 ft. from the surface. Room 2 had a doorway into Room 4, which in turn had

¹ It has been suggested by Prof. Haverfield that the block formed by these rooms may have been a small temple, similar to the one to the east of the forum, on the north side of the main road (*Archaeologia*, vol. lxii, pl. i).

² *Archaeologia*, vol. lxi, p. 573.

440 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

doorways into Rooms 3, 5, and 6. Room 5 was paved with fine brick concrete and had a small recess in its north wall. Excavation under the floor revealed another floor 2 ft. 6 in. below, and 4 ft. 6 in. below the grass level. On the east and west walls were remains of white-coloured plaster with black splashes on it. No plaster was preserved *above* the late floor, and only a few fragments of common black pottery were found between the floors. The small plan (fig. 18)

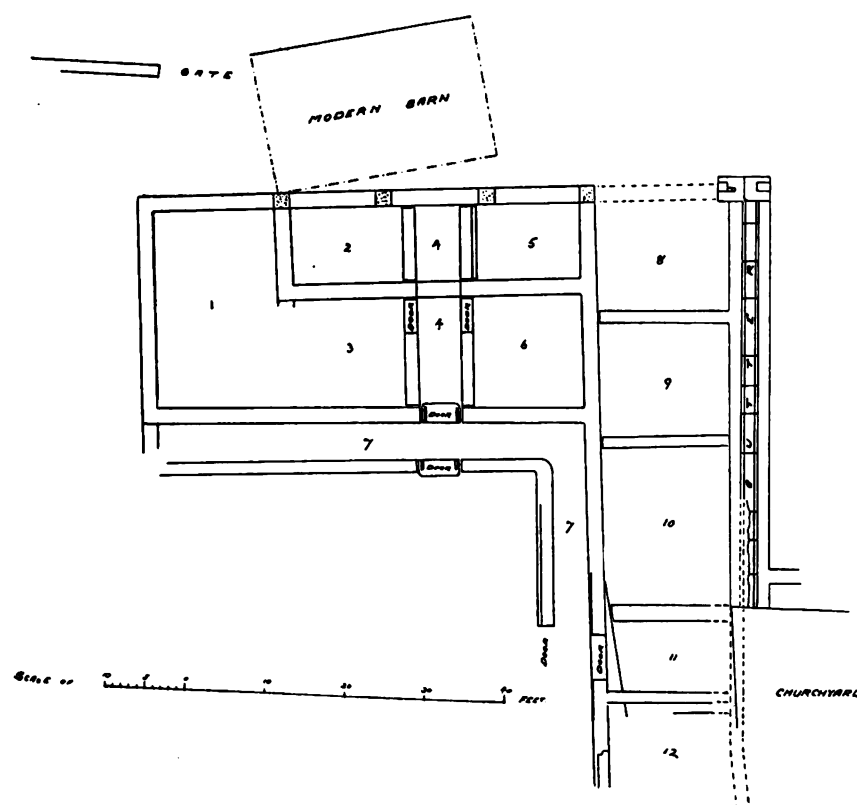


Fig. 18. Plan of earlier building, under House no. XIX s.

shows the early building as far as we can reconstruct it. Two long corridors gave access to the rooms of the house, and its front wall followed the line of the fronts of the other early buildings in the field. None of the floors were preserved, but in the corridor (no. 4 on plan) a quantity of fragments of a very fine mosaic pavement were found, and throughout the layer of *débris*, just above the floor level, was a large quantity of finely coloured wall plaster. From the fragments found we gather that the walls had been divided into panels, and in these various draped figures had been painted. The floor level of the building was fixed by the two large threshold stones at the south end of the corridor, and

on this level a coin of Antoninus Pius with rayed crown, in mint condition, was found (Cohen 785, 1st ed.).

Along the north wall of the house was a series of bases at regular intervals. One better preserved than the others had a chamfered plinth with a square pilaster above it (fig. 19).

In the rooms to the east of the corridor no small objects were found, but amongst the débris which filled them was a large number of squared blocks of calcareous tufa, many with coloured plaster still adhering to them. Just to the east of these rooms and running under Rooms 6 and 7 of the later building was a fine stone gutter, which probably took the street drainage and the water from the eaves of the roofs to the garden at the back of the houses. Two large square blocks with square holes in them terminated the north end of it, and to the south it continued under the churchyard. Several of the blocks had been broken away so as to allow the walls of the later building to be erected.

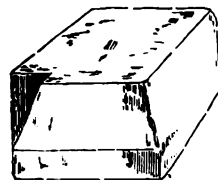


Fig. 19.
House no. XXI s.: Base
with chamfered plinth. $\frac{1}{2}$.

HOUSES NOS. XXII s, XXIII s.

House no. XXII s, to the east of House no. XIX s, was separated from it by the usual narrow space, and was very similar in plan to most of the others. We were unable to complete the excavation of this house, or the one to the east again, as the southern portions lie within the churchyard. Room 1 of this house was a later addition, and in it were found twenty coins of Valens 2 ft. from the surface. In the north wall of Room 2 was a circular column base built up of small stones and mortar, the first of the kind found at Caerwent. Some good columns of this construction have been found at Corbridge.

The street on the east side of this house is a continuation of the one from the north gate of the city, and as usual it was paved with stones and gravel rammed together. Along the east side was a footpath of large blocks of sandstone; these were at first taken to be the cover stones of a drain, but no trace of a drain could be found underneath them. No trace of water-pipes was found in the street.

House no. XXIII s had been enlarged at the expense of the street, Rooms 1 and 2 being built over it. The sandstone blocks had not been removed, and the south wall of Room 2 was carried over them by a semicircular arch. The arch, the paving of the street, and the walls of the house were all much out of position owing to the large sinkage that had taken place under this house and

442 EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE

House no. XXIV s (fig. 20). Here there had evidently been a natural hollow which had been filled up in early Roman times, for excavation to the bottom brought to light several fragments of Samian ware, Dragendorff shape 29.

House no. XXIII s, before its extension over the street, had an open verandah, the three bases of the columns of which were still *in situ* with square holes in them, and a small drain was found running under the north-west angle of Room 1. The building had been used as a workshop, and the three furnaces it contained

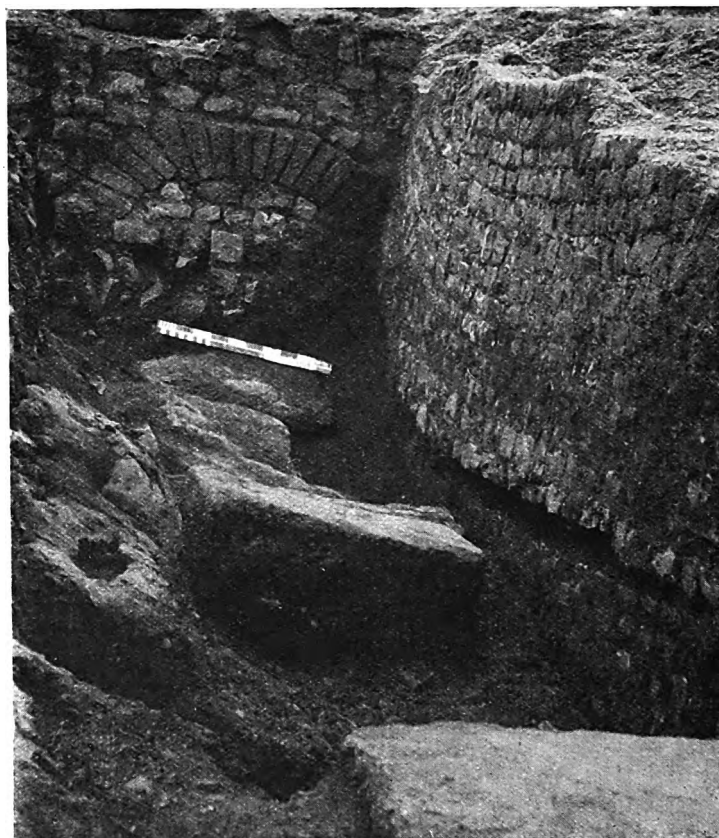


Fig. 20. Sinkage of street paving, arch and west wall of House no. XXIII s.

were all in a very bad condition. The space between Houses XXIII s and XXIV s had been used as a passage way, and was paved with blocks of sandstone; under one of them was a perfect upper stone of a quern. The little we could excavate of House no. XXIV s showed that it also had been fitted with furnaces, and a large one had been constructed at a later date over the street in front of it. Built into the walls of this furnace were a number of arch voussoirs of old red sandstone. They were all of the same size as those in the arch in the south wall of Room 2, House no. XXIII s. The construction of the street in front of these houses was as follows: At 1 ft. 6 in. below the grass

level was a layer of rough stones from 6 in. to 1 ft. in thickness; the surface was very uneven, and this must be taken as the latest state of the street, or more probably only as fallen building material lying upon it. A coin of Allectus was found on this level. Under the stones was a layer of mortar 4 to 5 in. thick, and under this was a hard even surface of gravel rammed together, and continuing to the north wall of the houses. The gravel had a total depth of 1 ft. 10 in., and had been put in in layers from 2 to 3 in. thick. Below the gravel was a foundation of large stones 9 in. to 1 ft. in thickness. In the sections cut only a few fragments of plain Samian ware and a few animal bones were found. The continuation of the drain found in the church path (*Archaeologia*, vol. lix, p. 122) was not discovered.

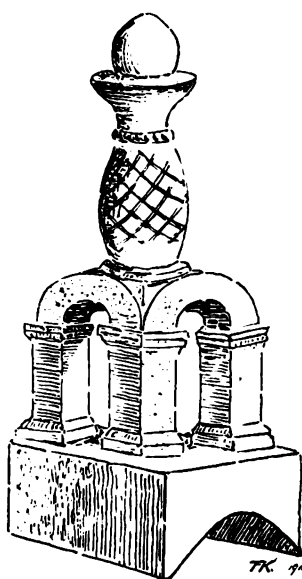


Fig. 21. Suggested restoration of finial.

The whole of the shops along the main street were probably roofed in the same manner, with a central ridge and gables at the north and south ends. This is substantiated by the finding of a finial (pl. LIX, fig. 1) in front of House no. XX s, and also of many roofing-tiles close to the east and west walls of the buildings, among which were some with square ends, which came from the eaves of the roof. The narrow space between the houses would then serve to carry away the water which would drop from the eaves. Fig. 21 shows a suggested restoration of the finial.

The whole of the roofs were constructed of stone; the tiles of old red sandstone, and the finials and ridges of freestone, which was probably quarried at Dundry, near Bristol. The tiles were secured with iron nails, many of which still remain in them; and the finials and ridge-pieces were kept in place by their shape and weight, and were fixed with mortar.

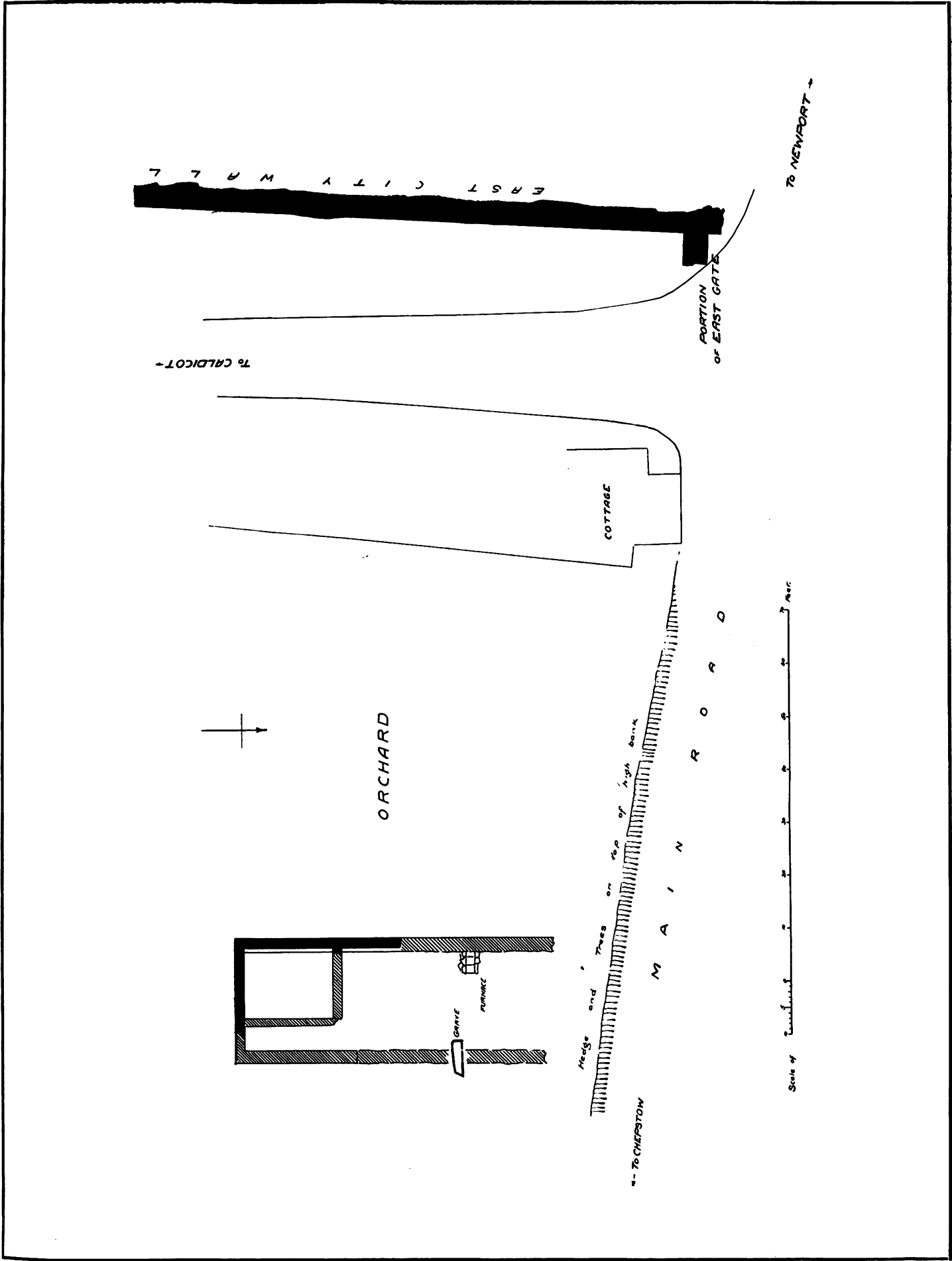
THE EXCAVATIONS IN THE VICARAGE ORCHARD.

By the kind permission of the Vicar of Caerwent, the Rev. W. Coleman Williams, we were able to excavate the garden and orchard attached to the vicarage. The vicarage is situated to the east of the city, about 60 yards from the east city wall, and on the south side of the main road. The garden, which lies to the south of the vicarage, was excavated without result, but the orchard, which is to the north-west, was found to contain a Roman building very similar in plan to the shops on the south side of the high-road (pl. LXIII). The north



Fig. 22. Stone coffin with skeleton found in Vicarage Orchard.

wall of the house had been entirely destroyed by the cutting of the modern main road, which is here several feet below the level of the Roman road, and nearly all the northern portion of the building had been disturbed by later burials, as in the case of House no. XVII s. One of the skeletons discovered was buried in a coffin built of slabs of old red sandstone (fig. 22), which had probably been taken from the floor of one of the rooms of the house. Altogether thirty skeletons were found both in and round the building. A coin of Victorinus and several illegible minims were found, but the only other finds of note were



CAERWENT. PLAN OF BUILDING IN THE VICARAGE ORCHARD

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the upper stone of a pair of millstones and a few fragments of black pottery. The whole of the orchard was examined, but no other walls were discovered.

Pl. LXI, fig. 3, shows an iron plane which was found in House no. XII s in 1904, but which has not previously been illustrated.

Appendix on the Insect Remains. By ARTHUR H. LYELL, Esq., M.A., F.S.A.

Mr. C. O. Waterhouse, I.S.O., F.E.S., has been kind enough to examine the insect remains, consisting almost entirely of beetles, which have been found during the last ten years in soil taken from the Romano-British pits and wells on the sites of Silchester and Caerwent. About seventy species have been thus identified. Most of the determinations have been made from elytra. Some of the insects were identified by their heads alone, some from thorax and elytra, and in a few cases from head, thorax, and elytra. As one would expect, the majority are ground beetles, *Carabidae*; next to these are the various dung beetles, *Aphodius*, *Onthophagus*, *Geotrupes*, *Cercyon*, *Sphaeridium*, and *Histeridae*. There are numerous *Brachelytra*; three species of carcass beetles, *Necrophorus* and *Silpha*; and two water beetles, *Agabus* and *Hydrobius*. The furniture beetles, *Anobium*, would appear to have been a house pest even in Roman times, remains being found in six instances at Silchester, and in three localities at Caerwent. Wooden furniture is very rarely found on either site, only one turned leg of a stool or couch having come to light during the whole of the Silchester excavations; nevertheless, these beetles suggest that furniture did exist in Romano-British times in England, apart from any written history or evidence that may exist on other sites; but it is possible of course that the beetles may have been in the woodwork of the houses. As a whole, the species are such as one might expect to find now. There seem to be some differences in the sculpture of the elytra of a few of the beetles. The two specimens of *Pterostichus niger* from Caerwent differ slightly from modern examples, and the specimens of *Aphodii* also show differences which prevent the identification of the particular species. Mr. Waterhouse suggests the possibility of slight changes having taken place in our modern species since the Roman occupation, or that it is possible that some of those he has not been able to identify may be species not on our British list. From both Caerwent and Silchester the earwig, *Forficula*, occurs, also pupae of *Diptera*, and *Acari*, whereas Silchester can alone boast of the ant and a larva of a moth.

Insects	1904 House XIII N. well at 22' 2"	1904 House XIII N. well at 22' 9"	1904 House XIII N. well at 23' 10"	1905	1906	1908	1909 Bottom of well W. of House XXIV N.
COLEOPTERA							
GEODEPHAGA							
Carabidae							
<i>Nebria brevicollis</i> , <i>Fab.</i>			x	x			x
<i>Leistus fulvibarbis</i> , <i>Dej.</i>							x
<i>Cychrus rostratus</i> , <i>L.</i>					x		x
<i>Carabus catenulatus</i> , <i>Sc.</i>							x
<i>Pterostichus striola</i> , <i>F.</i>							x
" <i>niger</i> , <i>Ill.</i>		?			?		x
" <i>vulgaris</i> , <i>L.</i>			x	x	x		x
<i>Poecilus cupreus</i> , <i>L.</i>							x
<i>Amara</i> spp.		?	x	x	x		x
<i>Calathus cisteloides</i> , <i>Pz.</i>		?	x	x	x		x
<i>Clivina collaris</i> , <i>Hbst.</i>	x					x	
<i>Harpalus (puncticollis)</i> , <i>Pl.?</i>			x				
<i>Bembidium lampros</i> , <i>Hbst.</i>			x	x			x
" spp.		x	x				x
<i>Trechus minutus</i> , <i>F.</i>			x				
Various small Carabidae	x	x	x	x	x	x	x
BRACHELYTRA							
(<i>Tachinus</i> ?)							x
<i>Ocypus olens</i> , <i>Müll.</i>						x	
" <i>brunnipes</i> , <i>F.</i>					x		x
" <i>morio</i> , <i>Grav.</i>			x				
<i>Philonthus laminatus</i> , <i>St.</i>			x				
" (<i>aeneus</i> ?)						x	
" sp.		x					
<i>Othius fulvipennis</i> , <i>F.</i>							x
<i>Xantholinus linearis</i> , <i>Ol.</i>		x	x				x
" <i>punctulatus</i> , <i>Pk.</i>		x		x		x	
Remains of Brachelytra						x	
NECROPHAGA							
<i>Necrophorus humator</i> , <i>F.</i>							x
<i>Silpha tristis</i> , <i>Ill.</i>							x
" <i>atrata</i> , <i>L.</i>							x
CLAVICORNIA							
<i>Choleva</i> 3 or 4 spp.		x		x	x		x
<i>Hister</i> spp.							x
<i>Gnathoncus punctulatus</i> , <i>Th.</i>						x	
<i>Cercyon</i> 4 or 5 spp.	x	x	x	x	x	x	x
LAMELLICORNIA							
<i>Aphodius granarius</i> , <i>L.</i>				x		x	x
" 5 or 6 spp.			x	x	x		x
<i>Oxyomus porcatus</i> , <i>F.</i>		x		x	x		
<i>Geotrupes putridarius</i> and perhaps another species		x				x	

EN

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EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE 447

	1904 House XIII N. well at 22' 2"	1904 House XIII N. well at 22' 9"	1904 House XIII N. well at 23' 10"	1905	1906	1908	1909 Bottom of well W. of House XXIV N.
SERRICORNIA <i>Elateridae.</i>							
<i>Athous vittatus, F.</i>					x		x
<i>Agriotes obscurus, L.</i>		x					
MALACODERMATA <i>Ptinidae.</i>							
<i>Anobium domesticum, L.</i>			x			x	
HETEROMERA							
<i>Blaps similis, Latr.</i>							x
RHYNCHOPHORA							
<i>Apion (aeneum)</i>						x	
" (<i>radiolus</i>)							x
<i>Sciaphilus muricatus, F.</i>					x		
(<i>Ombus</i>)					x	x	
<i>Rhinoncus</i>					x		x
Parts of various weevils				x		x	
ORTHOPTERA							
<i>Forficula</i>			x				
DIPTERA							
Numerous pupae		x			x		
ACARI							
One of the <i>Oribatidae</i>					x		

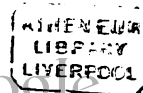
Appendix on the Vegetable Remains from Caerwent, 1909 and 1910.

By ARTHUR H. LYELL, Esq., M.A., F.S.A.

A good many small sticks were obtained from the mud collected from the pits and wells explored at Caerwent during the excavations carried on in the summer of 1909. Most of the pieces were in the rough and fragmentary condition with the bark on; a few, however, had the appearance of having been cut or trimmed with some sharp instrument. Hazel, elder, and maple were the commonest, with a fewer number of sticks of oak, willow or poplar, birch, and ash. Five small pieces of wood, each about one inch long and less than half an inch in diameter, which came from the bottom of a well south of House no. XXIV n, showed in transverse section a two years' growth, having a very definite structure with a large pith cavity. Having failed to identify this specimen, I sent the pieces to Kew, with the result that the Director was good enough to send me the following report: 'The specimen from Caerwent is probably the stem of one of the Malvaceae. The structure of the stem shows considerable resemblance to that of *Lavatera arborea*, L., and it appears likely that the specimen may be a piece of the stem (*i. e.* either branch or main stem) of a species of *Lavatera*.'

The vegetable remains found in 1910 were very disappointing. A pit in House no. XV s, twenty feet in depth, and a deep hole between Houses nos. XXIII s and XXIV s were the only sites which contained anything of interest. The former yielded small pieces of charcoal of oak, holm oak, hazel, hornbeam, and willow or poplar, also a few charred seeds of wheat and small pea. In this pit also were some bones which Mr. E. T. Newton kindly examined and reports as follows: 'All the bones are (with few exceptions) in small fragments and quite indeterminable. None of them show any signs of having been gnawed or digested. A few have been burnt; but the greater part of them have not been subjected to any great heat. It is remarkable that these bones should be in such small fragments; but I am unable to suggest any cause for this. There is nothing to indicate that any of these remains are of human origin; and none of them belong to animals larger than a sheep, except one piece of tooth which I think is part of a small ox. The head of a femur may have belonged to a sheep. The golden plover seems to be represented by a coracoid bone, and there is also a single incisor tooth of a mouse and a scale of a fish.'

From the deep hole no seeds of plants were obtained, only some charcoal of oak, elder, and willow or poplar. It seems highly probable, seeing that most of the contents of these pits showed charred remains, that they were filled up with the sweepings of some hypocaust or hearth, together with a small mixture of unburnt bones.



XX.—*Pleistocene Man in Jersey.* By R. R. MARETT, Esq., M.A., Reader in
Social Anthropology, Oxford.

Read 23rd February, 1911.

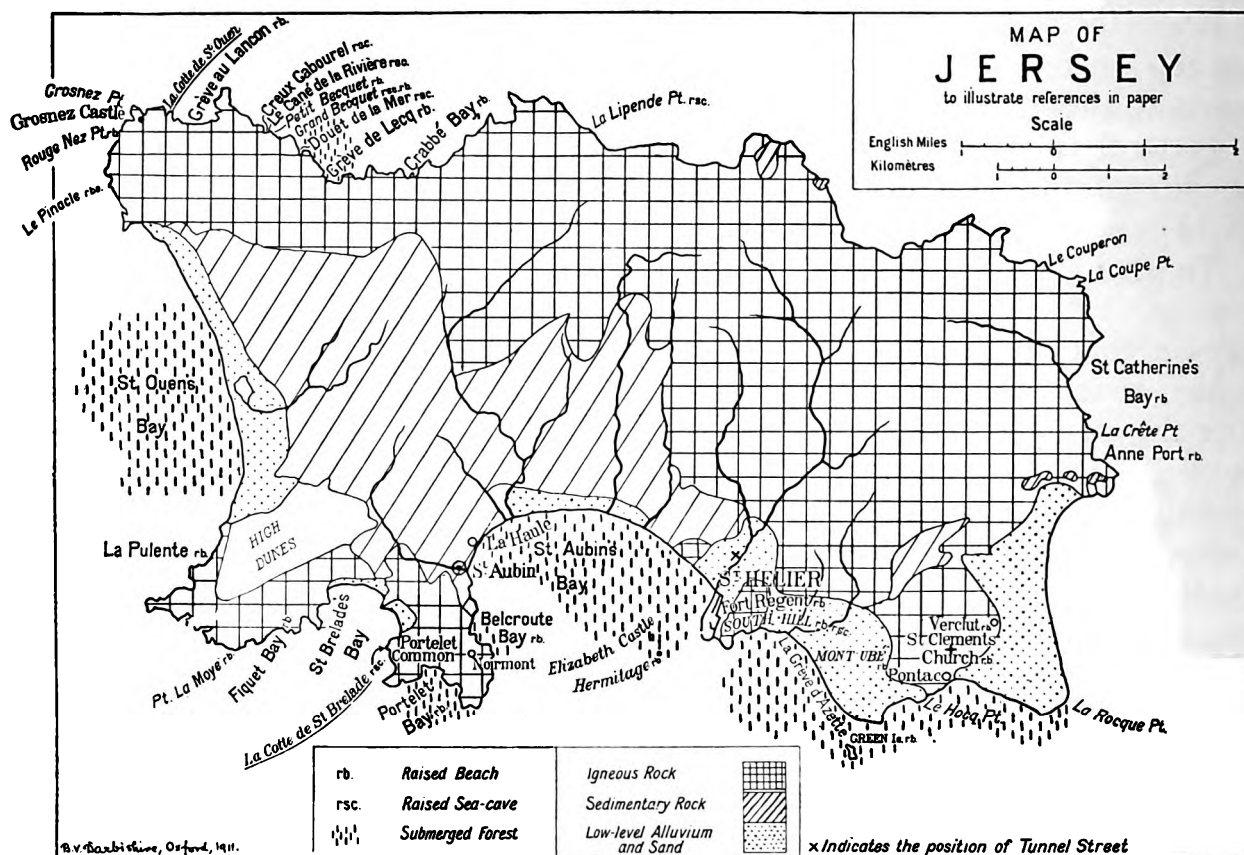
THE object of the following paper is threefold: first, to give some account of certain relics of pleistocene times, from a cave situated on the south coast of the island of Jersey; secondly, to notice the contents of another cave existing near the north-west corner of the same island, the horizon here being more uncertain, though not improbably pleistocene; and, thirdly, to discuss briefly the general relation of the pleistocene to the post-pleistocene traces of pre-historic man in Jersey in the light of the available evidence, whether archaeological or geological.

In what follows I am to be held entirely and solely responsible for all statements of fact, as also for all deductions therefrom. It is only right to say, however, that the first part of my task has been greatly facilitated by a clear and detailed report on the recent exploration of the first-named cave, as conducted under the auspices of the Société Jersiaise. This has appeared in *Man*, x. 102 (Dec. 1910),¹ above the signatures of Messrs. E. T. Nicolle and J. Sinel, who are respectively the Hon. Sec. of the Société Jersiaise and the Curator of its museum. Moreover, these gentlemen, as well as Dr. A. Dunlop, who has published valuable contributions to the later geological history of the island, and Mr. G. Piquet, who knows every inch of the Jersey coast, have allowed me to draw freely on their bountiful stores of local knowledge. Of the illustrations, two, showing an interesting implement worked on two faces, which comes from the second of the caves above mentioned and is now at Guernsey in the Lukis Museum, are due to the kindness of the Rev. G. E. Lee, Local Secretary for the Channel Islands to the Society of Antiquaries; three, representing specimens of my own finding, were prepared for me at the Pitt-Rivers Museum in Oxford under the experienced eye of the Curator, Mr. Henry Balfour; and the rest are mostly the fruit of the ingenuity and skill of Mr. E. Guiton, whose camera goes with him into slippery places, or else of Mr. Sinel, who has likewise lent a helping hand with several of the diagrams. I am also indebted for valuable information and assistance to M. Commont, M. l'Abbé Breuil, Prof. Sollas, Prof. A. Thomson, Prof. A. Keith, Dr. A. Smith Woodward, Dr. Andrews, Mr. Clement Reid, Mr. Reginald A. Smith, Mr. F. B. Pidduck, Mr. F. H. S. Knowles, and other kind friends.

¹ Reprinted, with four illustrative plates, in 36^e *Bulletin de la Société jersiaise*, 69 f.

A. LA COTTE DE ST. BRELADE.

The first of the two caves here in question I shall refer to under the title of *La Cotte de St. Brelade*, thus adding the name of the district in which it is situated to its vernacular designation, namely, *La Cotte*. I do this in order to avoid confusion with the second cave, *La Cotte à la Chèvre*, or, as I shall term it, again adding the name of the district, *La Cotte de St. Ouen*. It is perhaps worthy of passing mention that, in this word *cotte*, the dialects of the Channel Islands preserve the Scandinavian *kot*, as appears notably in the common phrase



for pigsty, *cotte à cochons*.¹ This survival is not surprising amongst a people who likewise call their farm-yard *bel*, and their stack-yard *ho-gard*, where we have simply the *bæli* and *hoy-gard-r* of Old Norse. Indeed, there is some evidence to show that this language was spoken in outlying parts of the islands as late at any rate as the eleventh century; for, as I am informed by my friend Mr. G. F. B. de Gruchy, Seigneur of Noirmont and proprietor of La Cotte de

¹ Cf. G. Métivier, *Dict. Franco-Normand*, Lond. 1870, s.v. *Cotte*, who suggests a Celtic derivation for the word. I am informed, however, by Sir John Rhys and Professor Anwyl that, in their opinion, the word *cwt*, meaning pigsty in Welsh, is not of Celtic origin, but is undoubtedly derived from the English 'cot'.

St. Brelade, a charter of about 1091 describes Jethou as the island *quae vulgo Keikhulm vocatur*.

The cave is situated on the south coast, in the cliff which bounds St. Brelade's Bay to the eastward. It is tucked away within a large cleft with perpendicular sides, which has been formed in the granite of the cliff-head by the erosion of an intrusive dyke of softer rock. This cleft is about 200 feet high and 40 feet wide, whilst it penetrates to a depth of some 150 feet. The rear wall would seem to be almost as sheer as the sides, but is masked by a steeply sloping talus of earthy matter interspersed with granite boulders of local origin, many being of great size. With its southern aspect, its two sheltering screens, and a difficulty of access which, under present conditions at all events, is very pronounced, this was a retreat that could hardly fail to attract inhabitants. The cave itself has been hollowed out, presumably by sea action during a time of greater submergence, at the landward end of the western side-wall, some 60 feet above the present mean-level of the sea. It is about 20 feet wide, and is 25 feet high as measured from the floor reached by the recent excavations, which may not, however, be exactly the true floor. As to the depth, further digging must determine its full extent, since only a comparatively shallow section of floor has been laid bare, whilst there is a receding cavity in the domed roof which possibly denotes a concealed interior having, say, another 30 feet of depth. Before it yielded to the spade, the cave was choked with firmly compacted débris, which rose flush with the entrance to within a few feet of the roof (plate LXV. 1). On the seaward side of the cave, however, a series of narrow fissures separated the intrusive rubble from the live rock, and suggested possibilities of excavation.

It was at the bottom of this row of fissures that, in 1881, Messrs. Dancaster and Saunders found flint chippings *in situ*, after being led to search there by accidentally lighting on a flint implement at the foot of the talus. Later on, in 1894, Mr. Colson and Dr. Chappuis made a small excavation at the same spot, and brought to light not a few worked flints, as well as a piece of bone breccia containing the tooth and the metatarsal of a horse. Thereupon, in 1905, the Société Jersiaise decided to explore the cave systematically, and, as before, the left-hand corner was made the point of attack. This work had soon to be abandoned, however, since it became clear that a more extensive opening was needed in view of the danger of falling stones. Not until July of last year (1910) was a clearing made of about 11 feet square, the result of three weeks' labour (plate LXV. 2); and here various members of the society had the satisfaction of unearthing the animal remains about to be described, as well as some hundred implements, all of which showed the same general facies, namely that of Le Moustier. I was myself unfortunately absent from the island at this stirring

moment, but, returning shortly after when the work was apparently suspended, did a little burrowing on my own account, the results being exhibited herewith. The very day after I was there a block weighing half a ton overwhelmed the place in which I had been searching. I was hardly surprised, therefore, to hear that the Société Jersiaise soon desisted from an attempt which they made in September to resume operations. The society, however, will certainly not be deterred, even by the considerable expense entailed by shoring-up the roof, from extorting the last ounce of treasure from this well-guarded strong-room.

The yield of objects of archaeological interest was confined to a layer of no great thickness overlying the floor reached by the present excavation. Interspersed with larger or smaller fragments of granite was a blackish soil of ashes mixed with clay. Here and there, however, it gave place to a whitish breccia signifying the presence of bone. Most of this was in a highly disintegrated condition. The clay of the island has strongly decalcifying qualities. Moreover, the series of fissures above mentioned supplied a conduit for such rain-water as found its way into the cave.

Some 8 feet back from the left side of the entrance were the remains of a hearth containing ashes in abundance. These ashes, by the way, yield on analysis a strong reaction for phosphates. Exactly the same thing occurred with ashes obtained by me from an Aurignacian hearth in the cave of Gargas, in the Department of Hautes-Pyrénées. Bone ashes in such quantity might be thought to indicate a scarcity of wood fuel. On the other hand, bone might well be used, even when wood was plentiful, on account of its property of slow combustion. Further, a convenient way of tidying up a hunter's cave would be to sweep the refuse into the fireplace.

My personal observations were confined to the wall of *débris* immediately in rear of this hearth. For two or three feet above the floor-level occasional worked flints, together with chips innumerable, were to be found lying at all angles, and obviously re-arranged by the more or less violent fall of intrusive rubbish, rather than covered up slowly and quietly as they lay. I have not noticed, however, any scratchings or striations on the smooth flint surfaces. The higher portions of the superincumbent mass were, as far as I could see, almost wholly sterile. It may be worth noticing, however, that here and there small fragments of flint occurred, though whether they belonged to the original influx of material must remain doubtful. Possibly in recent times explorers, having taken odd bits of flint from the lower fissures, dropped them on the top of the *débris*. This much at any rate is certain, that nothing has hitherto been found to suggest a subsequent tenancy of the cave by people of a distinct culture. Everything points to a single and homogeneous occupation.

A problem which has an important bearing on the geological history of Jersey

in pleistocene times is to account for the fact that these relics of Mousterian man are overlain with fifteen to twenty feet of angular rock rubbish imbedded in a matrix of clayey matter. The first question to be settled is how this rubble found its way into the cave. The report in *Man* supposes it to have taken place through a lateral thrust exerted by the talus masking the back of the ravine, dilapidation of the roof being likewise shown to have contributed its quota to the mass. It seems to me more likely, however, that the dome-like cavity in the roof represents the lower part of a blocked, and therefore concealed, chimney communicating with the upper surface of the cliff. Working its way down such a natural rubbish-shoot, an influx of material similar to that clothing the back of the ravine would inevitably assume the position lately occupied by the débris in the cave; whereas it is hard to conceive how any amount of lateral thrust could ever force the heavy drift so far inwards and even upwards. The presence of such a chimney, too, would help to account for the rotten state of the roof. I may add that a decidedly nerve-racking climb up the further side of the western wall will show that immediately behind and above the part of the cliff, some 50 feet thick or less, that is penetrated by the cave there is a thick patch of 'head', the lower end of which, jutting out into space, threatens at any moment to cut the verification short.

The second, and larger, question to be attacked is, under what conditions, and at what approximate period, did the rubble in the cave, and the neighbouring talus, come into being? I venture to suggest that the deposition of so considerable a quantity of rubble, in a site not favourable to its accumulation, could not possibly be ascribed to such subaerial waste as occurs to-day. Intense cold and excessive surface-denudation are surely implied. In other words, conditions verging on the glacial, with heavy snowfalls and very penetrating frosts, must be invoked. Certain it is, at least, that the present land-surface in the vicinity of the cliff is incapable of supplying any such fall of drift, since the head of the cliff stands as high as the neighbouring moorland, and is moreover cut off from it by a fairly deep depression. I conclude, then, that the talus in question is to be correlated with the peculiar formation occurring along the opposite coast of England, and known as 'Head'. That the Mousterian man occupied this cave at some time anterior to the Head-period, as it has been termed,¹ is a view quite in accordance with the place usually assigned to this period in the geological series.

Osteological remains of pleistocene fauna and of man constitute an important feature of this find. Although the bone discovered was in bad condition, enough

¹ By W. A. E. Ussher, *Quart. Journ. Geol. Soc.*, 1878, 449 f. I take it, however, that the so-called period merely stands for the latest and best-marked stage of a formation that may be of all ages subsequent to the pliocene.

of it retained some semblance of the original form to enable Dr. A. Smith Woodward, of the British Museum, working in conjunction with Dr. Andrews, to give us a fair idea of the fauna contemporary with the human denizens of the cave. When it is not otherwise stated, they regard the following determinations as certain :

(1) The Woolly Rhinoceros (*Rhinoceros tichorhinus*) is represented by part of a tooth, a left lower premolar, and probably also by a portion of bone not less than 6 inches in diameter and about 9 inches in length ;

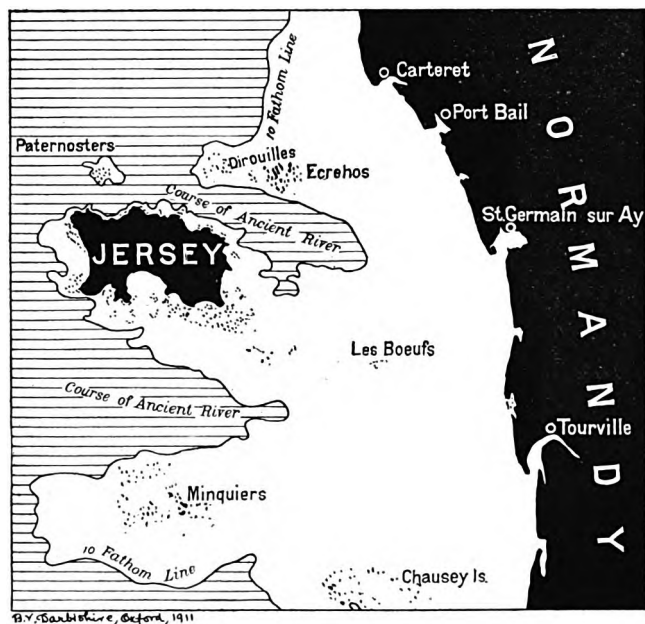
(2) The Reindeer (*Rangifer tarandus*), by two teeth, last premolar and first molar, and by several portions of antler : it appears to have been a large variety, as large as the Caribou ;

(3) A small species of Horse, by upper cheek teeth, and a large species by parts of lower molars and by an upper cheek tooth ;

(4) A species of the smaller *Bovidae*, by lower teeth in a portion of jaw, by part of a horn-core, and probably by pelvic bones ; whilst there is also a left incisor tooth of *Bos* of uncertain species ;

(5) Another bone is probably the articulation of the fore-leg of some species of Deer.

From these identifications two deductions can be made with some confidence. The first is that we have here a pleistocene fauna characteristic of the steppe rather than of the tundra. The second is that when these animals were alive Jersey was connected with the Continent.¹ I give a sketch, constructed from the Admiralty chart, of what Jersey and its neighbourhood would look like at low tide if a general elevation of 60 feet were now to take place.² The presence of the reindeer is worth noting, since this animal has been thought by some authorities to make its first appearance in



Jersey elevated 60 feet, at low tide.

bourhood would look like at low tide if a general elevation of 60 feet were now to take place.² The presence of the reindeer is worth noting, since this animal has been thought by some authorities to make its first appearance in

¹ It is of course just conceivable that the animals crossed over to Jersey on a bridge of pack-ice ; or, again, that the Mousterian hunters, having made their kill on the Continent, carried back the spoil to their winter quarters over a more or less frozen sea. But the variety of the larder is all in favour of the view that the supply was both regular and close at hand.

² The similar map in R. A. Peacock, *Sinkings of Land* (1868), assumes an elevation of about 130 feet, the change thus effected in the appearance of the coast-line being, however, slight.

France in the course of the Mousterian period; though it has recently been shown, for Belgium at least, to be pre-Mousterian.¹ It may be added that in none of the Channel Islands have any traces of unquestionably pleistocene animals, such as the woolly rhinoceros and the reindeer, been hitherto discovered. A horse, apparently of the ordinary size, of which portions of the right humerus were, in 1873, found embedded in the loess, when the railway cutting at Pontac in Jersey was being made, is the only previous claimant to such distinction of which I know. Dr. Andrews, of the British Museum, who made the identification, informs me that there is nothing in the condition of the bone to forbid its being reckoned as pleistocene, but adds the warning that mere condition is no sufficient test of age in such a case, seeing how the degree of mineralization undergone by the specimen varies greatly according to the nature of the matrix and other circumstances. To return to the subject of the Cotte, it would in favourable circumstances have been interesting to search here for traces of the utilization of bones as implements. Such a practice was not unknown to the later Mousterians, as has been proved, for instance, by Dr. H. Martin at La Quina, in the Department of Charente. As it is, however, this criterion cannot be turned to account in determining the horizon of the Cotte, as all the bone hitherto discovered is in a wretchedly disintegrated state.

As regards osteological remains of man, nine teeth were found in a state of excellent preservation, though with their crowns much worn down by use; whilst a piece of bone which might be part of a human tibia was also brought to light. The fact of the occurrence of odd portions of the human anatomy in or near the refuse-heap accompanying a hearth might seem to some a damning proof that these cave-men were cannibals. After all, the Mousterians of Krapina in Croatia have been accused by their discoverer, Herr Gorjanović-Kramberger, of having held cannibal feasts in their rock-shelter, the proofs consisting in the numerous human bones lying about in a broken or burnt condition, though these, it would appear, are broken across, and never longitudinally, as is usually done with the marrow bones of food animals.² It may be added that the famous jaw of La Naulette looks as if it had been cracked in two with a hammer, and that we hear of other jaws that seem to have been demolished intentionally and are to be referred to the Mousterian period. M. Dupont has actually found what he considers to be traces of cannibalism in no less than thirteen Belgian caves occupied by pleistocene man.³ The Jersey evidence, however, is far too slight to afford a basis for

¹ A. Rutot, *Bull. Soc. belge de Géol.*, xxiv (1910), 75 and n.

² H. Breuil, *Les plus anciennes races humaines connues* (Fribourg, 1910), 52.

³ See A. Rutot, 'Le cannibalisme à l'époque des cavernes en Belgique,' *Bull. Soc. préhist. de France*, 1907, and compare his note, *Bull. de l'Acad. roy. de Belgique*, 1908, 525.

any such presumption. It may be worth adding that the teeth show no traces of the action of fire upon them.

In the report in *Man* it is stated: 'In one part of the most coherent bone mass had been the right half of a human lower jaw, nine teeth being ranged side by side in original position, but unfortunately no trace of the once supporting bone was apparent.' When the teeth were subjected to detailed examination, it soon became evident that this first impression could not be sustained. Mr. F. H. S. Knowles, of the Anatomy Department at Oxford, after measuring and identifying the separate teeth, proved them to belong to both sides of the upper and lower jaws of the same individual, in the order indicated in the accompanying photograph (plate LXX. 3) with which he has kindly supplied me. His measurements and determinations were afterwards checked, amplified, and confirmed by Professor A. Keith, Curator of the Museum of the Royal College of Surgeons. The latter has laid me under the deepest obligation by composing, from the comparative point of view, an elaborate study¹ of these interesting teeth, which he ascribes to an adult of twenty to thirty years of age. It is impossible here even to summarize conclusions based on a vast number of the most delicate observations. Suffice it to say that he regards *Homo Breladensis*² as one of the most, if not the most, primitive of the examples yet discovered of the Neanderthal type of man. It is especially in the characters of their roots that these human teeth represent, in his view, an extreme form of primitiveness. Their true affinity is with the teeth of *Homo Heidelbergensis*, who in respect of sheer age is probably by far the earliest man yet found in Europe, rather than with the teeth of the men of Krapina and Spy. The crowns are smaller than those of the Heidelberg mandible. The roots, however, are in most cases absolutely, and in other cases relatively, greater in their diameters, indicating a smaller but still more powerful mandible in the individual of the Cotte de St. Brelade—such a mandible, in fact, as, when plied with huge muscular strength, could cope with the tough food of the period. The following measurements thus have value as bearing at once on the distribution of the Neanderthal type and on the evolution that took place within that type itself.

¹ Published in *Journ. Anat. and Physiol.*, Oct., 1911. See also Professor Keith's summary account in *Nature*, May 25, 1911, p. 414, from which I extract most of what immediately follows.

² It is simplest to write *Breladensis*, from the modern St. Brelade, since there are endless ancient forms of the name as it occurs in Jersey and France (e. g. St. Breladre near Dol); see l'Abbé Manet ap. M. de la Croix, *Jersey: ses Antiquités* (1859), i. 200. Thus I find *Ecclesia Sancti Brolardi* in the *Extente de l'Ile de Jersey* of 1227, *Breuerlardi* in the *Livre Noir* of Coutances, 1278, *Broelardi* in the *Extente* of 1331, as well as *Brouarlardi*, *Breuelardi*, *Broaladri* in the early Registers.

TEETH OF HOMO BRELADENSIS.

MEASUREMENTS IN MILLIMETRES.

	CROWN.			NECK.		TOTAL LENGTH.	
	proximo-distal.	labio-lingual.	maximum height.	proximo-distal.	labio-lingual.	Actual.	Original.
1. MOLAR 1st upper right	11	12	5	9	12.4	15	20-25
2. PREMOLAR 2nd upper left	6.5?	10.5	6	6	11.2	19	22-23
3. MOLAR 2nd upper left	10.5	13	5.5	9.5	13.5	20	23-24
4. MOLAR 2nd lower right	12	11.5	5.5	10	10.5	19	20
5. INCISOR 2nd lower right	5.75	7	6.5	5	8	20.5	24
6. CANINE lower left	8	8	9	7	11	27	28
7. PREMOLAR 1st lower left	7.75	10	6	6.5	10	23.75	24-25
8. PREMOLAR 2nd lower left	7	9	7	6	8.5	21.75	22-23
9. MOLAR 2nd lower left	12	11.75	5	10	11	17.5	20-22

It remains to take stock of the implements discovered. Considering that the area of exploration has been relatively small, the cave has yielded a rich spoil of worked flints. Naturally the percentage of mere flakes without secondary chipping is high. After all, did not Mr. Roth watch Australian natives strike off 300 such flakes before obtaining one that proved passably suitable for a good knife?¹ Nevertheless, in digging (to speak only for myself) I could count on hitting on an implement of the best finish pretty well for each square foot of breccia that I painfully sifted out. Moreover, my spoil included at least three good examples of the so-called 'Mousterian point'.² The facies of these

¹ W. E. Roth, *North Queensland Ethnography: Bulletin*, no. vii, 16.

² M. Rutot, indeed, declares that one is lucky to find a single good specimen of the 'point' in 100 implements gathered from a Mousterian site. He explains this by supposing the Mousterian point to be the scraper that represents as it were the 'survival of the fittest', namely, one that has stood heavy use on both sides, with constant rechipping to revive the edge, until the well-known triangular form results. See *Bull. Soc. belge de Géol.*, xxiii (1909), 261.

dressed stones was extraordinarily uniform. Though my specimens are a mere third or fourth part of what the Société Jersiaise possesses, I doubt whether any but the slightest variations in the type are disclosed when one institutes comparisons on the wider basis. No flint, so far as I know, has been found in this cave showing secondary chipping on both faces. The single exception to this rule lies in the fact that the bulb of percussion is sometimes notched, thereby affording a better grip to the thumb; if indeed these notches be not mere undesigned *éraillures*. The material employed is as excellent in its own way as could be desired. The black flint, in particular, would lend itself to the last refinements of craftsmanship. The grey flint is also of good workable quality for the most part, though two of my specimens are made out of a rather coarse chert. Two implements are fashioned out of fine pieces of banded flint. To judge by the cores and other leavings, the raw material was obtained in the shape of rounded pebbles. The fact that the implements run rather small might possibly mean that this material was relatively hard to obtain.¹

The geographical source of these flints is an interesting problem. Nowhere in the islands is flint to be found *in situ*, though chalk occurs near the opposite coast of the Cotentin.² On the other hand, flint pebbles are to be found amongst the shingle of every beach in Jersey, though nowhere, I believe, in large numbers save at one spot, namely, between the neighbouring points known as La Coupe and Le Couperon, at the north-east corner of the island.³ It may well be, then, that the sea has eroded away, or now covers, beds of chalk a good deal more accessible to the pleistocene inhabitants of Jersey than the still existing chalk deposits of the Cotentin. On the other hand, if it be thought that the Jersey cave-man utilized pebbles from the beach, it would have to be postulated that, whilst Jersey was connected with the Continent, the general land-elevation was but slightly higher, so as to allow the sea to approach closely to what is now the island.

It remains to add that, apart from flints, various water-worn pieces of granite or other kind of local rock, all of which might well have been picked up on

¹ I owe this suggestion to M. Commont.

² If the flint came from still existing beds, the presence of banded flint in both Cottés might possibly afford a clue to the place of origin.

³ See D. Ansted and R. Latham, *The Channel Islands* (London, 1865), 293 [3rd ed. 1893], and C. Noury, *Géologie de Jersey* (Paris et Jersey, 1886), 131 n, who tries somewhat unconvincingly to explain the accumulation of flints in this locality by the prevailing set of the currents. It has been suggested to me that the fairly numerous flints of St. Aubin's Bay may come in part from the ejected ballast of ships. In the cutting below South Hill, however, Dr. Dunlop found a goodly proportion of well-rounded flint pebbles in a raised beach that must go back at least to the days of coracles (*Quart. Journ. Geol. Soc.*, 1893, 525). Flint pebbles are found deep down in the low-level clay of Guernsey: see G. Derrick, *Trans. Guerns. Soc. Nat. Sci.*, 1892, 215. Flints also occur in some of the low-level raised beaches of Alderney: see C. G. de la Mare, *ib.* 237.

a beach, occur in the breccia. Whether introduced by man or not, these are certainly not of a piece with the superincumbent rubble which contains granite fragments having uniformly sharp edges. Some of these stones, as has been suggested in the report in *Man*, may have been employed for heating water in the manner still in vogue amongst certain savages. One round pebble of felspar (pl. LXVI. 2, 4th r. 4) has marks on it which might be the result of using it as a hammer, though it must be confessed that the dents appear to follow the natural cleavage planes. M. Commont suggests, by way of alternative, that it may be a sling-stone. A good-sized block of water-worn granite (180 by 125 by 60 mm.), with flattened upper and lower surfaces, shows a smooth patch, as if some vigorous rubbing had been done upon it.

Though hardly to be classed as implements, certain chalk fossils (echinoderms), at one time exhibited in the museum of the Société Jersiaise as part of the yield of the Cotte de St. Brelade, may be mentioned in this place, in order that their connexion with the cave may be called in question. They arrived with a batch of flint implements gathered in the early days of the exploration of this cave by Mr. R. Colson. It appears, however, that Mr. Colson has no recollection of having lighted on these fossils in this unlikely place—an experience that he would surely not forget. Moreover, he is ready to allow that he had similar fossils in his possession at the time, and that some of these might have accidentally found their way into the collection of flints. In 34^e *Bulletin Soc. jer.*, 445, Mr. Sinel deduces a land connexion with England from the presence of such fossils in the Cotte; but I understand from him that he is no longer disposed to count them amongst the authentic possessions of the Jersey cave-men.

The detailed descriptions that follow of typical implements from La Cotte de St. Brelade refer to plates LXVI and LXVII. Of these LXVI represents my own finds, LXVII the finds of others. All the originals are in the museum of the Société Jersiaise. Plate LXVII is from blocks lent me by the society. The description in each case begins at the top and proceeds from left to right. The measurements of length, breadth, and thickness are in millimetres.

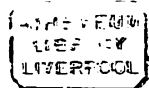
PLATE LXVI. I.

- 1st row. (1) $58 \times 34 \times 14$. Utilized flake of blackish-grey flint; some of crust retained on upper face.
 (2) $49 \times 61 \times 17$. Broken scraper, fracture ancient, of blackish flint.
 (3) $65 \times 40 \times 18$. Triangular scraper of grey flint with slight chipping on right side; retains some of crust near base; heel trimmed, and bulb slightly chipped to improve hold.
 (4) $62 \times 31 \times 6$. Thin blade of grey flint, not utilized.
 (5) $59 \times 26 \times 10$. Blade-scraper (*racloir sur lame*, M. Commont), of black flint, with rough chipping on right side.

- 2nd row. (1) $56 \times 45 \times 13$. Rough scraper of blackish-grey flint ; represented with bulb uppermost.
- (2) $61 \times 29 \times 11$. Beautifully finished combined scraper (*racloir-grattoir*, M. Commont) of beautiful black flint, with fine chipping at base as well as along both sides up to the point.
- (3) $56 \times 31 \times 13$. Pointed scraper (*pointe-racloir*, M. Commont) of yellow-black flint ; retains some of crust at heel.
- (4) $68 \times 36 \times 19$. Rough double scraper of black flint, with some of crust at point ; bulb chipped.
- (5) $61 \times 38 \times 19$. Rough double scraper of black flint, with some of crust on right side.
- 3rd row. (1) $63 \times 46 \times 21$. Coarse scraper of blackish-grey flint, with some of crust on upper face.
- (2) $89 \times 43 \times 12$. Long scraper of blackish flint, with fine chipping on left side.
- (3) $67 \times 44 \times 14$. Beautiful pointed scraper (Mousterian point) of black flint, finely worked along both edges and trimmed at base.
- (4) $71 \times 45 \times 13$. Beautiful scraper of black flint, pointed, finely worked on right side, and trimmed at base ; bulb deeply chipped to give good hold.
- (5) $67 \times 50 \times 11$. Beautiful pointed scraper of black flint, finely chipped all round ; bulb slightly chipped.

PLATE LXVI. 2.

- 1st row. (1) $73 \times 58 \times 18$. Beautiful double scraper of grey flint, carefully worked all over upper face and neatly trimmed at base.
- (2) $60 \times 33 \times 12$. Scraper of grey flint, chipped mostly along right side, and broken on left side.
- (3) $59 \times 53 \times 16$. Notched plane (*coche-grattoir*, M. Commont) of grey flint.
- (4) $95 \times 51 \times 17$. Very beautiful double scraper of bluish-grey flint, covered with ferruginous incrustation from the clay.
- 2nd row. (1) $91 \times 70 \times 15$. Levallois flake, without secondary chipping, of grey flint.
- (2) $64 \times 42 \times 14$. Combined scraper ; grey flint with slight chipping all round.
- (3) $81 \times 62 \times 18$. Single scraper (right side) of yellowish chert.
- (4) $63 \times 57 \times 20$. Rough discoid scraper of gritty chert, possibly a utilized nucleus.
- 3rd row. (1) $97 \times 32 \times 9$. Utilized blade of grey flint, retaining core along one side.
- 4th row. (1) $39 \times 35 \times 9$. Small disc of dark flint, possibly a utilized nucleus.
- (2) $67 \times 38 \times 9$. Scraper, with slight chipping, of banded flint (bluish-grey with white bands). A second instrument of the same banded flint was found in the Cotte de St. Brelade, and is in the museum of the Société Jersiaise.
- (3) $59 \times 44 \times 15$. Flake slightly utilized (if at all), showing curious blue patina, which extends over the bulb and lower surface, as if an old flake had after a long interval been rehandled.



- (4) $54 \times 49 \times 29$. Felspar pebble, perhaps hammer (the dents on the surface may be due to this use, though they seem to coincide with the cleavage planes), or else a sling-stone (*bolos*).

PLATE LXVII. I.

- 1st row. (1) $75 \times 44 \times 15$. Beautiful ovate combined scraper, with chipping all round ; of grey marbled flint with patina and ferruginous stains. Found by Capt. Rybot in early days before the excavation, and probably exposed to atmospheric influences on the surface of the soil.
- (2) $95 \times 60 \times 26$. Double scraper of blackish-grey flint, with chipping mostly on right side, trimmed at base, and with bulb notched. Represented on obverse side.
- (3) $108 \times 47 \times 13$. Single scraper of grey flint, with coarse chipping on right side.
- (4) $64 \times 50 \times 15$. Single scraper of black flint, with slight chipping on right side, and trimmed at base.
- 2nd row. (1) $76 \times 35 \times 8$. Double scraper of grey flint, with slight coarse chipping, mostly on the right side. Some ferruginous deposit on upper surface.
- (2) $83 \times 52 \times 13$. Scraper of banded flint, with trimmed base and marks of use, but no secondary chipping. Represented on obverse side.
- (3) $109 \times 73 \times 15$. Levallois flake, with coarse chipping on right side and top of left side, and trimmed at base. Bluish-grey flint with yellow mottling, possibly a patina, this implement being one of those found by Mr. R. Colson in 1905.
- (4) $93 \times 71 \times 13$. Coarse single scraper of black flint, with chipping on right side, and a trimmed base which retains some of the core.
- 3rd row. (1) $125 \times 75 \times 20$. A pointed double scraper of a flint unlike that of which the other implements found here are made, being marbled white and grey. Longitudinal deep flaking, with fine chipping along right side. Some of the core showing on the left near the base. The implement protruded from the débris several feet above the floor, after the large stone had fallen which cut short my investigations in 1910. It seems to be of a different type from the rest.
- (2) $88 \times 45 \times 12$. Double scraper of brownish flint, somewhat patinated (found by Mr. Colson before excavation), with slight chipping along both sides, trimmed base, and notched bulb. There is a deep flaw across upper face.
- (3) $99 \times 57 \times 22$. Beautiful double scraper of blackish-grey flint with high polish, chipped along both sides and trimmed at base, and having bulb notched and under-side trimmed over the whole surface for 65 mm. from base. A little of the core left at base. Shows signs of use, edge being broken on right side.
- (4) $98 \times 55 \times 21$. Double scraper of blackish-grey flint, with coarse chipping on both sides and right across upper face.

PLATE LXVII. 2.

- 1st row. (1) $112 \times 94 \times 22$. Flake of dolorite, with ferruginous stains, chipped over upper face.
 (2) $75 \times 15 \times 8$. Flake of felsite (a rock occurring on north-eastern side of island), without secondary chipping.
- 2nd row. (1-7) Specimens of smaller flint flakes, without secondary chipping.
- 3rd row. (1) $54 \times 43 \times 12$. Flake of black flint, with trimmed base, but no other secondary chipping.
 (2) $70 \times 45 \times 15$. Double scraper of grey flint, chipped on both sides, base trimmed, bulb slightly notched.
 (3) $93 \times 56 \times 13$. Coarse irregular single scraper of grey flint, with chipping along right side, base trimmed.
 (4) $62 \times 45 \times 12$. Single scraper of grey flint, with chipping along right side, base trimmed.
- 4th row. (1) $92 \times 42 \times 11$. Single scraper of grey flint, with chipping along right side.
 (2) $90 \times 55 \times 51$. Utilized flake of grey flint, with trimmed base, but no other secondary chipping.
 (3) $86 \times 43 \times 11$. Same description as no. 1 of this row.
 (4) $78 \times 37 \times 13$. Same description as no. 2 of this row.¹

B. LA COTTE DE ST. OUEN.

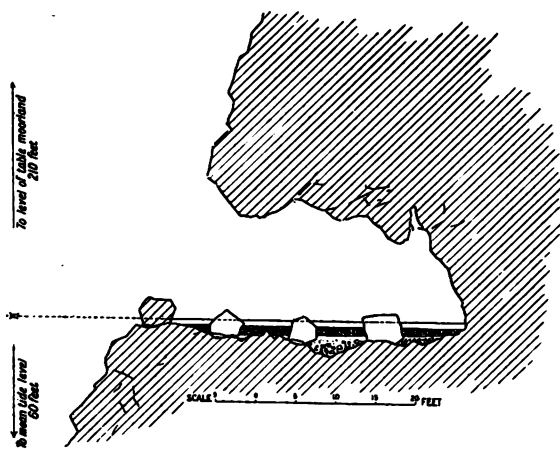
The cave is situated at the north-west corner of Jersey, not far from Grosnez Point (plate LXV. 3).² From the landward side it is completely hidden by the surrounding crags, which jut out from the face of weather-worn cliffs of granite, for the most part absolutely precipitous. It is for some way in from the entrance twelve to fifteen feet high, the breadth being much the same, and is about 33 feet deep. The accompanying plans, prepared for me by Mr. Sinel, will make further details as to its size and position unnecessary. It stands at about the same level above the sea as does the Cotte de St. Brelade, namely, at a height of some 60 feet above Ordnance Datum. Both caves, presumably, were eaten out by the waves during the same period of relative submergence, namely, that which is marked by the 70-foot raised beach discernible in several places round the island. According to Mr. Sinel, a member of the first exploring party, the original floor, which has now been considerably disturbed by digging, consisted of orange-coloured clay, followed a few inches down by pinkish clay, which in turn had china clay underneath it. It is in the lowest of these beds that the archaeological discoveries about to be described were made. The cave, though small, is conveniently shaped for human habitation, and is effectively roofed in and screened

¹ This plate gives examples of the coarser type of implement passing into the mere flake. On the specimens of the two lower rows M. Commont remarks generally: '*Éclats caractéristiques du Moustérien des limons du nord de la France.*'

² The cave is indicated by a white cross.

at the sides from wind and rain. It has, however, the great disadvantage, as compared with the Cotte de St. Brelade, of facing north. This would prove a serious matter if the climate tended towards the arctic.

In 1881 Messrs. Sinel and Dancaster, assisted by Mr. Hotton, of Guernsey, carried out a more or less thorough excavation of the cave. It was somewhat too readily assumed, however, that nothing further was left to the discoverer. In January of this year, on a day that proved the cave to be waterproof rather than windproof or warm, I plied the spade for some three hours, and, after some unsuccessful probing in places that had evidently been already searched, I hit on a largish stone sunk some 2 feet in the clay a little within the entrance to the right, which after repeated efforts I managed to dislodge. Underneath were the obvious remains of a hearth, namely, a foot's depth of ashes, with whitish bands in places showing that bone had once been there. Under the ashes



La Cotte de St. Ouen, Jersey : Vertical Section.



La Cotte de St. Ouen, Jersey : Horizontal Section.

was clay, and between this clay and bed-rock was a layer of very hard sand, presumably deposited at the time of the erosion of the cave by the sea. Over a hundred flint flakes were picked up by me within a narrow space. I came away with the impression that this site will bear a fuller investigation, and am glad to be able to say that the Société Jersiaise intends to take the matter up without delay.¹

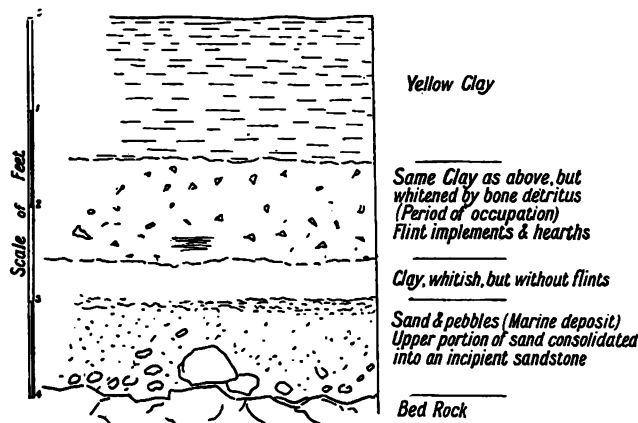
To deal first with the nature of the earthy matter found in this cave. The occurrence of layers, as marked by differences of colour and appearance, in the original floor has already been noted. It remains to inquire whether this clay

¹ This further exploration was carried out, under the superintendence of Messrs. Nicolle and Sinel, a week or two after this paper was read. A systematic search yielded few implements, but made clear the important fact that this is undoubtedly a sea-cave, having rounded pebbles as well as much hard sand for its lowest layer. Further, accurate plans were made of the shape of the cave; these the kindness of Mr. Sinel enables me to reproduce here.

is of local origin, namely, the product of the decomposition of the granite walls of the cave itself, or is an intrusive deposit, corresponding more or less to the rubble filling the Cotte de St. Brelade. The fact, first pointed out to me by Mr. Sinel, that in the roof of the Cotte de St. Ouen ribs of hard rock alternate with softer portions, which have decomposed away into hollows, makes it unnecessary, I think, to look beyond the limits of the cave itself for the source of the 3 feet of clay overlying the sand and pebbles—a veritable raised beach—occurring immediately above bed-rock. If this theory be accepted, one might go on plausibly to argue, on the somewhat risky assumption of a uniform rate of rock-decomposition, that, since the Mousterian floor would seem on an average to have only about six inches of clay underneath it, as against five times as much above it, the formation of the cave itself roughly antedates the

Mousterian occupation by an interval which needs to be multiplied by six to carry us from the beginning up to the present day.

As regards osteological remains, the explorers of 1881 found, in the last stage of decay, the lower jaw of a large deer, of undetermined species; but, though, as I have said, traces of bone waste are not wanting, nothing else has hitherto come to light that can be definitely referred to the anatomy of man or any other animal.



La Cotte de St. Ouen, Jersey Section of Floor.

Of the implements found in this cave in 1881, some, but by no means all, have found their way into the museum of the Société Jersiaise. Perhaps the most interesting (pl. LXIX. 2, 3) was secured by Mr. Hotton, a visitor from Guernsey, who carried it off in order to present it to Dr. Lukis, the eponymous hero of the well-known museum of that island, wherein it is to be seen at the present day. It is of grey flint, and measures 76 by 57 by 54 mm. By its size it might well be Mousterian, and the fact that it is chipped on both faces is in no wise fatal to such a determination. Judging simply from my description of it, M. l'Abbé Breuil identifies it with the *coup-de-poing cordiforme* of the Lower Mousterian. This heart-shaped outline is not peculiar to it, being common also to three other implements, with trimmed base and showing marks of use, which come from this cave. Flakes with secondary chipping upon them were extremely rare. Of unworked flakes, on the other hand, the greater number discovered in 1881 proved to be rather small, thin blades, and it was thought that this pointed to skin-dressing as a leading industry of the cave-folk.

Mr. Sinel speaks of their having found ashes near the further end of the cave, so that it would seem to be a different hearth from the one which I disinterred near the entrance. A lump of iron pyrites, apparently a strike-a-light, was found by them at the same time.

Of my own finds (pl. LXVIII. 1), the best is a large Levallois flake, with coarse secondary chipping not only on one side but likewise on the other in the vicinity of the bulb. M. Commont, judging from the photograph, compares it with the implement, assigned by him to the Lower Mousterian, which is figured in his valuable study of the Mousterian industry in the North of France.¹ There is also a good Levallois flake showing signs of use, and with the base consisting of a number of facets—a characteristic which convinces M. Commont that this industry is Mousterian rather than Acheulean. One implement, described by M. Commont as a scraper-saw, was obtained by me, not with the rest, but hidden away in a deep crevice near the roof of the cave, with a good thickness of cave-earth above it. A granite pebble found in the hearth, measuring 85 by 70 by 48 mm., has a smooth patch upon it, showing that it has been used for grinding or polishing. It remains to add that my observations hardly bore out the view of the former explorers that the flakes on the whole ran small. I secured quite a large number of coarse flakes of fair size, and apparently in many cases showing marks of use, though without secondary chipping. Indeed, the white flint, of which they are mostly composed, appears to me to be of comparatively poor quality, and hardly such as to lend itself to delicate manufacture, as does the black or grey flint of the other cave.

A question on which other opinions may possibly disagree with mine is whether the implements from the Cotte de St. Ouen are Mousterian, as those from the Cotte de St. Brelade undoubtedly are. M. Commont, judging simply from the photographs, believes them to be typically Mousterian, and points out that they correspond in all points to the industry described by him in the paper already cited. In the flint worked on both faces he finds nothing exceptional. It is an example of a type that persisted into Mousterian times, though the Mousterian implements, as compared with the Acheulean, are smaller, if not necessarily of poorer finish.

If such a determination be accepted, the further question arises, Are these two Jersey sites contemporaneous, or, if not, which is the earlier of the two? That the two industries are on the face of them distinct will, I think, be allowed. The style, the very material, is markedly divergent. The two workshops—for such they may truly be termed, in view of the multitude of cores and oddments

¹ *L'Industrie moustérienne dans la région du Nord de la France*, 5^e Congrès préhist. de France, Session de Beauvais, 1909, p. 128, fig. 15.

with which they are severally littered—were at any rate quite independent of each other. But do they belong to different epochs? Until further exploration provides us, as I hope it may, with a wider basis of induction, I am inclined provisionally to regard the industry of the Cotte de St. Ouen as at least slightly the older of the two. I base this view mainly on the analogies provided by M. Commont's series from the North of France.¹ It may be just worth adding that, if, as is generally held, the climate was gradually growing colder during the Mousterian period,² the Cotte de St. Ouen would become unpleasant as a winter resort long before the Cotte de St. Brelade, with its sheltered situation and southern aspect. Apart from the morphology of the implements, however, there is at present little or nothing to build on.

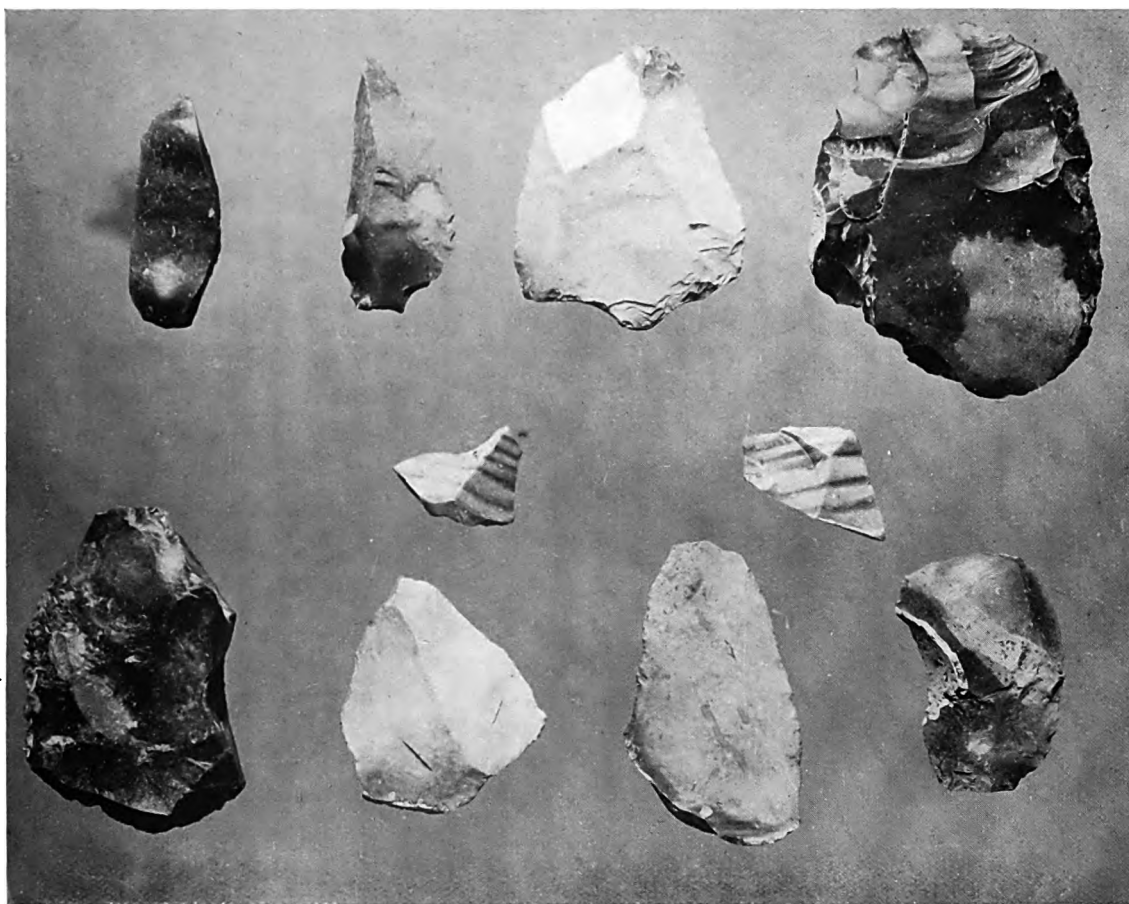
The detailed descriptions that follow refer to plate LXVIII. 1, 2, of which the upper portion represents my own finds, the lower the finds of others. All the figured specimens are in the museum of the Société Jersiaise, where many cores and unworked flakes are also to be seen. The order of description and scale of measurement are as before.

PLATE LXVIII. I.

- 1st row. (1) $73 \times 27 \times 8$. Unutilized blade of black flint, which is comparatively rare in this cave.
 (2) $79 \times 34 \times 16$. Thickish blade, probably utilized, of grey flint.
 (3) $88 \times 70 \times 19$. Utilized Levallois flake, of the white flint characteristic of this cave, with the base worked along several planes.
 (4) $118 \times 93 \times 20$. A fine Levallois flake of black flint coarsely chipped on upper face, and also below, on and near the bulb.
- 2nd row. (1) $40 \times 35 \times 12$. Fragment of banded flint, such as also occurs rarely in La Cotte de St. Brelade.
 (2) $53 \times 29 \times 12$. ditto.
- 3rd row. (1) $191 \times 65 \times 21$. A rough thick scraper, slightly chipped along one side, of black flint; represented with bulb uppermost.
 (2) $72 \times 62 \times 16$. Utilized flake of white flint; scraper or knife.
 (3) $96 \times 53 \times 23$. Utilized flake of whitish flint (*racloir-scie*, M. Commont), with some of core near base; found by itself in a cranny of the roof under much cave-earth.
 (4) $74 \times 47 \times 14$. Coarse single scraper of grey flint.

¹ I am glad to say that, after having independently come to this opinion on the strength of the French parallels, I ascertained that M. Commont himself, and another great authority, M. l'Abbé Breuil, were inclined to place the two industries in the same order. It is only fair to them, however, to state that they did not have an opportunity of actually handling any specimens, but judged merely from my photographs and descriptions.

² Thus M. l'Abbé Breuil informs me in a letter that he finds the bison grow rarer and the mammoth more common in France as the Mousterian period advances.



I



2

1 (Phot. H. Balfour), 2 (Phot. J. Sinel). Implements from La Cotte de St. Ouen.

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ALFRED WOOD
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PLATE LXVIII. 2.

- 1st row. (1) $56 \times 39 \times 14$. Double scraper of black flint ('Mousterian point') with chipping along both sides and bulb notched; core showing on left side of base.
- (2) $58 \times 38 \times 9$. Single scraper of blackish-grey flint, chipped along left side, and with trimmed base.
- (3) $37 \times 35 \times 13$. Mousterian disc of blackish flint with heavy chipping and notched underneath.
- (4) $80 \times 36 \times 24$. Double scraper of blackish-grey flint, more or less quadrangular, with trimmed base.
- 2nd row. (1) $76 \times 56 \times 12$. Flake of white flint, utilized on left side.
- (2) $103 \times 81 \times 25$. Heart-shaped Levallois flake of greyish-white flint, trimmed base, and showing marks of use.
- (3) $102 \times 39 \times 10$. Flake (saw) of greyish-white flint, serrated along right edge.
- (4) $81 \times 50 \times 13$. Coarse single scraper of grey flint, chipped on left side, but showing marks of use along right edge, with base trimmed.
- 3rd row. (1) $70 \times 47 \times 14$. Utilized flake of grey flint.
- (2) $55 \times 54 \times 20$. Heart-shaped flake of black flint, showing marks of use, with thick trimmed base.
- (3) $58 \times 56 \times 19$. Heart-shaped flake of grey flint, showing marks of use, with thick trimmed base.
- (4) $61 \times 50 \times 14$. Flake of banded flint, showing marks of use, with thick trimmed base.

C. RELATION OF THE PLEISTOCENE TO THE POST-PLEISTOCENE TRACES OF PREHISTORIC MAN IN JERSEY.

Reasons of space make it necessary to attempt no more here than to provide certain heads under which a discussion of this interesting question might be conducted. The following order of topics will be adopted. First, the nature of the evidence will be summarily reviewed, according as it is merely archaeological, merely geological, or of a kind that permits some correlation to be established between archaeological and geological considerations. Secondly, a provisional series of periods will be constructed in order to assign the foregoing fragments of evidence to their various probable or possible horizons.

Archaeological Evidence.—In this category have to be noticed various implements of a seemingly palaeolithic facies which are exhibited in the museum of the Société Jersiaise. One set has there been tentatively classed as Chellean and another as Mousterian. (1) To me, I must confess, the Chellean character of the former group is far from clear. None of them shows any close analogy

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PLATE LXVIII. 2.

- 1st row. (1) $56 \times 39 \times 14$. Double scraper of black flint ('Mousterian point') with chipping along both sides and bulb notched; core showing on left side of base.
- (2) $58 \times 38 \times 9$. Single scraper of blackish-grey flint, chipped along left side, and with trimmed base.
- (3) $37 \times 35 \times 13$. Mousterian disc of blackish flint with heavy chipping and notched underneath.
- (4) $80 \times 36 \times 24$. Double scraper of blackish-grey flint, more or less quadrangular, with trimmed base.
- 2nd row. (1) $76 \times 56 \times 12$. Flake of white flint, utilized on left side.
- (2) $103 \times 81 \times 25$. Heart-shaped Levallois flake of greyish-white flint, trimmed base, and showing marks of use.
- (3) $102 \times 39 \times 10$. Flake (saw) of greyish-white flint, serrated along right edge.
- (4) $81 \times 50 \times 13$. Coarse single scraper of grey flint, chipped on left side, but showing marks of use along right edge, with base trimmed.
- 3rd row. (1) $70 \times 47 \times 14$. Utilized flake of grey flint.
- (2) $55 \times 54 \times 20$. Heart-shaped flake of black flint, showing marks of use, with thick trimmed base.
- (3) $58 \times 56 \times 19$. Heart-shaped flake of grey flint, showing marks of use, with thick trimmed base.
- (4) $61 \times 50 \times 14$. Flake of banded flint, showing marks of use, with thick trimmed base.

C. RELATION OF THE PLEISTOCENE TO THE POST-PLEISTOCENE TRACES OF PREHISTORIC MAN IN JERSEY.

Reasons of space make it necessary to attempt no more here than to provide certain heads under which a discussion of this interesting question might be conducted. The following order of topics will be adopted. First, the nature of the evidence will be summarily reviewed, according as it is merely archaeological, merely geological, or of a kind that permits some correlation to be established between archaeological and geological considerations. Secondly, a provisional series of periods will be constructed in order to assign the foregoing fragments of evidence to their various probable or possible horizons.

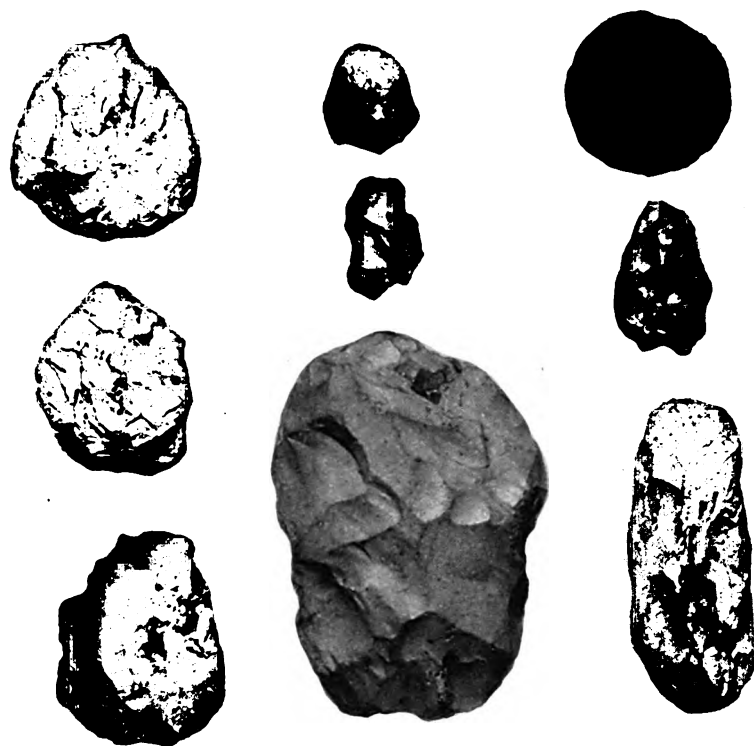
Archaeological Evidence.—In this category have to be noticed various implements of a seemingly palaeolithic facies which are exhibited in the museum of the Société Jersiaise. One set has there been tentatively classed as Chellean and another as Mousterian. (1) To me, I must confess, the Chellean character of the former group is far from clear. None of them shows any close analogy

with the classical types. (2) Some of the group classified as Mousterian, on the other hand, tend to show a discoid shape that is at least consonant with such an attribution.¹ Two of these implements, worked on both sides, bear some resemblance to the heart-shaped *coup-de-poing* from the Cotte de St. Ouen which is now in the Lukis Museum. The majority of these specimens of either class come from high moorland round the coast. Here the granite is usually overlain by no more than a foot or two of peaty soil, whilst in places the rock surface is exposed to the air. On one of these barer patches near Grosnez I found a neolithic axe-head of sandstone, and what I take for a good example of a Mousterian scraper of blackish flint, within a yard of each other, the specimens being now in the museum of the Société Jersiaise. For the rest, I would remark that frequent flint flakes and cores occur on the high moorland in the immediate vicinity of both Cottés, notably in a field bordering on Portelet Common, and at the sides of the rough track that leads to the ruins of Grosnez Castle. I add detailed descriptions of some of the most interesting of these sporadic implements, figured in plate LXIX, realizing full well that the classification of isolated specimens is always a matter of the greatest uncertainty.

PLATE LXIX. I.

- 1st row. (1) $78 \times 64 \times 26$. Discoid *coup-de-poing*, or possibly a utilized nucleus ('disc'), of white flint, with strong chipping over both surfaces, and trimmed base. Found June 1892 at La Crête Point, east coast, on the beach at high-tide level (having perhaps fallen from the neighbouring bank).
- (2) $41 \times 35 \times 1$. Disc of blackish flint trimmed all round, and showing remains of core.
- (3) $53 \times 53 \times 21$. Fine disc of blackish flint trimmed carefully all round, and showing remains of core.
- 2nd row. (1) $65 \times 56 \times 22$. Discoid *coup-de-poing* of white flint, with strong chipping over both surfaces, and trimmed base. Found Oct. 1897 by Mr. G. R. Cable built into the wall of a house at La Moye, doubtless as a charm against lightning, such a flint implement being known locally as a *coin de foudre* (for parallels see illustrative case, Pitt-Rivers Museum, Oxford).
- (2) $49 \times 28 \times 22$. More or less quadrangular scraper of greyish-blue flint, chipped along all four sides, and with trimmed base.
- (3) $56 \times 36 \times 25$. Same description as preceding.
- 3rd row. (1) $75 \times 67 \times 24$. Flake, possibly utilized as a *coup-de-poing*, of white flint, with upper surface trimmed, and lower surface consisting of the outside of the original pebble slightly scraped and trimmed.

¹ According to M. Rutot, these so-called Mousterian discs are merely cores, sometimes slightly reshaped in order, perhaps, to serve as missiles. See *Bull. Soc. belge de Géol.*, xxiii (1909), 262.



I



2



3

1. Sporadic implements, possibly pleistocene, from Jersey. (Phot. J. Sinel.)
2. Heart-shaped *Coup-de-poing* from La Cotte de St. Ouen. (Phot. G. E. Lee.)
3. Obverse of same. (Phot. G. E. Lee.)

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- (2) $134 \times 93 \times 41$. Heavy amorphous *coup-de-poing* of white flint, with coarse chipping over both surfaces except in the middle of the lower surface, where some of the core is left. Found by Dr. Chappuis at Grève d'Azette, south coast, on the beach.
- (3) $112 \times 45 \times 34$. Triangular implement of white flint, with coarse chipping on two sides and the third cut flat, and showing some of the core. Found Nov. 1882 by Dr. Chappuis on the moorland 350 yards south-east of Grosnez Castle.

Geological Evidence.—(1) In the first place, there must be set down under this head the rather complicated and uncertain facts relating to the subject of raised beaches, taken in connexion with raised sea-caves, as they may be termed. The hard palaeozoic rocks of Jersey preserve many excellent examples of these formations. To distinguish the effects of separate submergences and determine their relative age must always remain an awkward task, especially as no marine shells or other remains have hitherto been detected amongst the banked-up pebbles. Nevertheless, there is perhaps enough evidence to justify a provisional classification of these old beach lines, with the associated caves, as follows. At least four or five distinct groups must be recognized.¹ (a) The high-level raised beach at South Hill of 140 feet (plate LXV. 5) stands by itself, and for the very reason that it is unique is probably the oldest of these formations, time having obliterated all other traces of this deep submergence.² (b) The mid-level group of raised beaches of 60-70 feet is well marked all round the island; and it is with this submergence that I have conjecturally connected the scooping-out of the two Cottés. (c), (d), and possibly (e) The low-level raised beaches of 25-40 feet belong to two or three different groups, one of which would seem to be earlier than the mid-level group and the other or others later. Thus, at Le Cané de la Rivière (plate LXV. 6), one of those shallow caves, with floors 30 feet above o.d., which testify to a former low-level submergence, has its roof and back wall studded with the boulders of a fine raised beach, the top of which is another 30 feet higher. Again, some of the low-level raised beaches, as, for instance, the well-developed one at Portelet, are overlain by a thick layer of loess, a formation

¹ It is interesting to compare the list of raised beaches of Guernsey given by Mr. A. Collenette, 'The raised beaches, and cliff and rubble heads of Guernsey,' *Trans. Guerns. Soc. Nat. Sci.*, 1892, 219 f. These arrange themselves in a low-level series averaging 25 feet above o.d., and another averaging 57 feet (the highest 75 feet). The latter corresponds to the mid-level group of Jersey. Guernsey shows no parallel to the high-level raised beach at South Hill, Jersey, though rolled pebbles occur sporadically at levels as high or even higher.

² Mr. Clement Reid tells me that there is, or was, a raised beach of almost exactly the same height near Chichester; but English parallels are very scarce, a fact pointing to the conclusion that the submergence indicated is ancient, not improbably pliocene.

to be discussed presently. On the other hand, at Green Island, the low-level raised beach overlies the loess, and, as will be shown later by a reference to the Tunnel Street section,¹ can be assigned with some confidence to a submergence of the late neolithic period. I can at present suggest no criterion by which we can clearly distinguish the effects, if any, in the way of raised beaches, of the low-level submergence possibly indicated by the marine gravel underlying the lower peat in this Tunnel Street section. I append a full list of the raised beaches and raised sea-caves of Jersey as at present known to me. The heights given are relative to Ordnance Datum, and must be regarded as approximate only.

North Coast (W. to E.).—Cotte de St. Ouen, r. s-c., floor 60 ft., lowest layer consisting of sand with water-worn pebbles and boulders, *i. e.* a r. b.; Grève-au-Lançon, r. b., 40 ft.; Creux Gabourel, shallow r. s-c., floor 30 ft.; Le Cané de la Rivière, a cave of 200 ft. penetration entered by the sea, has above it a shallow cave of about 20 ft. penetration, floor 30 ft., with a r. b. wedged into its back wall and roof, with a greatest height of 60 ft. (Dunlop in 36^e *Bull. Soc. jers.* describes this spot under the name of Creux Gabourel, which is close by, but gives heights which, on testing, I found to be too low); Petit Becquet, E. side, r. b., 30 ft.; Grand Becquet, fair-sized r. s-c., floor 25 ft., covered by a thick r. b.; Douet de la Mer, r. s-c., floor 30 ft.; Crabbé, r. b., 30 ft.; La Lipende, r. s-c., 30 ft.

East Coast (N. to S.).—St. Catherine's, low-level r. b., vaguely described by W. C. Trevelyan, *Proc. Geol. Soc.*, ii. (1837), 577; Anne Port, r. b., 60–70 ft. (Dunlop, *Q. J. Geol. Soc.*, 1893, 526); Verclut, r. b., 70 ft. (Dunlop, *ib.*).

South Coast (E. to W.).—St. Clement's, W. of church on main road, r. b., 60–70 ft. (Dunlop gives section in 36^e *Bull. Soc. jers.*, 113); Mont Ubé, lane joining same main road opp. Samarès Lane, also parallel lane to the E., r. b., 40 ft., said by Mr. Sinel to have been formerly much more visible than now; Green Island (La Motte), r. b., 40 ft.; Fort Regent, E. side near bridge in Regent Road, r. b., 70 ft.; South Hill, r. b., 140 ft., in cup-like depression, about 11 ft. deep, closely packed towards bottom with well-rounded pebbles, specimens in museum of Soc. Jer. (first described by R. A. Peacock, *Sinkings of Land*, 1868, p. 3; full-page view in Dunlop, *Q. J. Geol. Soc.*, 1893, 524); foot of South Hill, low-level r. s-c., now blasted away (T. W. Danby, *Geol. Mag.*, 1876, 144); cutting below South Hill, low-level r. b. containing a number of flint pebbles (Dunlop, *ib.*); Hermitage, low-level r. b., now obliterated by harbour works (Danby, *ib.*); Belcroute, r. b., 25 ft.; Portelet, r. b., 25–30 ft.; Fiquet, r. b., 25 ft.; La Moye, in cave, r. b., 25 ft.

West Coast (S. to N.).—La Pulente, r. b., 25 ft.; Le Pinnacle, r. b., 25 ft., with another patch of r. b. near the roof of the tunnel at about 60 ft.; Rouge Nez, in cave, r. b., 70 ft.

¹ See p. 473.

² I have in the first instance drawn largely for my information on the writings of Dr. Dunlop (see A. Dunlop, 'On raised beaches and rolled stones at high levels in Jersey,' *Quart. Journ. Geol. Soc.*, 1893, 523; *Geol. Mag.*, 1893, 376; and 36^e *Bull. Soc. jers.*, 112), or else on the coast-lore of Mr. G. Piquet and Mr. E. Guiton; though in almost every case I can speak from personal observation of the facts.

(2) In the second place the loess, as it may be comprehensively termed, which crowns the heights of the island as a thick clayey deposit, and attains in places to a depth of 50 feet, may be considered under the same head.¹ The like formation occurs on the high plateau ground of the neighbouring island of Guernsey,² and indeed is in all respects similar to the loess of the North of France. Here and there it contains large erratics that are frequently tilted at an angle, and rolled pebbles that are often more or less bedded. These consist in all known cases, I believe, of such stone as is to be found somewhere about the island, though often they can be shown to have travelled several miles. This deposit cannot be explained as wholly due to rock-disintegration *in situ*, resting as it often does on a rocky basis which shows no signs of weathering. We shall probably not go far wrong in ascribing its origin in large part to diluvial conditions operating at intervals through the so-called Ice Age.³

(3) A similar formation is found likewise at all lower levels, and may for convenience be considered separately, without implying in the least that its origin or mode of deposition was distinct. It is especially worth noting that various excavations made in the less elevated parts of Jersey show, below the lower peat which undoubtedly corresponds to the early neolithic period, a bed of loess or clay. This is usually more or less yellow, intermixed with fragments of stone that can be shown to have travelled from a distance. Gravel beds occur in places both below it and immediately above it. Not too much stress, however, can be laid on such facts, as these lower layers are eloquently suggestive of unconformity, that is, of gaps in the evidence, testifying as they seem to do to the operation of violent agencies, which must have largely eroded away the pleistocene deposits.

Archaeological in association with Geological Evidence.—The third and last division comprises those rare cases in which geological data admit of some sort of correlation with archaeological and palaeontological discoveries. In the lower levels of the loess two osteological finds have been made which possibly take us back to the pleistocene.

(1) The first, already referred to, is that of a portion of the right humerus

¹ See Dunlop, 'On the Jersey Brick Clay,' *Quart. Journ. Geol. Soc.*, 1889, 118.

² Collenette, 'The raised beaches, and cliff and rubble heads of Guernsey,' *Trans. Guerns. Soc. Nat. Sci.*, 1892, 219 f.

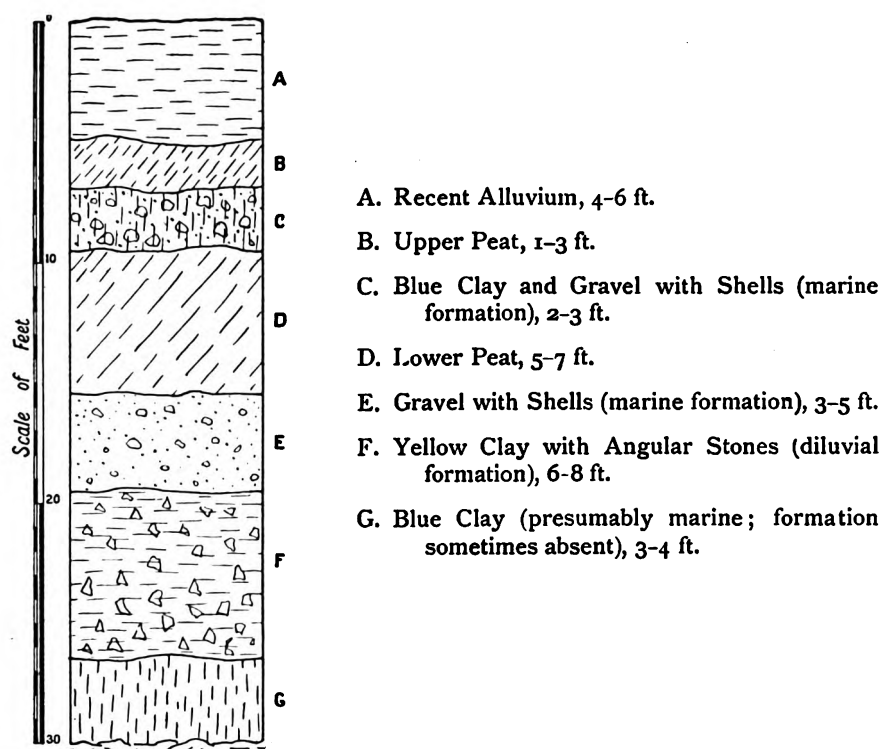
³ Cf. A. de Lapparent, *Traité de Géologie*, 5th edit. (1906), iii. 1698. Diluvial agencies are also invoked by M. Barrois in his masterly paper, 'L'extension du limon quaternaire en Bretagne,' *Annales de la Soc. Géol. du Nord*, xxvi (1897), 33 f., who, however, argues from an examination of the *Lösspudden*, the calcite of which, acting as a petrifying agent, preserves the lithological character of the primitive loess, that no notable transport has taken place, the loess common to Brittany and the Channel Islands being at least near its place of origin.

of a horse, which was brought to light in the railway-cutting near Pontac, say within twenty feet of the present high-water mark.

(2) The second is far more interesting, consisting of a somewhat dilapidated human skull, found in 1861 by Messrs. Bott and Bellis, in a site showing no signs of disturbance whether recent or ancient, near the bottom of the loess bed at Green Island (La Motte), about 12 feet below the present surface-level. The loess here rests immediately on the diorite rock, and contains, besides characteristic calcareous concretions (the *Lösspuppen* of the German geologists), fragments of granite which have travelled at least a mile. It is topped by a clayey stratum, wherein flint chippings and, I understand, fragments of pottery occur, and where I have myself discovered an implement of ground grit-stone, own brother to another previously found in the same place. This upper deposit, then, is post-pleistocene without doubt. Above it, again, is a well-marked raised beach, corresponding in all respects with the 40-foot raised beach on Mont Ubé, a mile away inland. Recent soil and vegetation crown this scrap of old Jersey, which, alas! can be shown to be shrinking in circumference at the rate of over a foot in forty years, since Snider bullets fired into it some forty years ago, and having an average penetration of about 15 inches, are now encountered near the surface. The skull (plate LXX. 1, 2), which is now in the museum of the Société Jersiaise, is a mere *calotte*. Moreover, it is damaged at the sides, there being a V-shaped fissure in the right wall that continues in a crack across the crown, whilst the lower part of the left wall has disappeared altogether. Exact measurement, then, is out of the question. The glabello-occipital length alone can be ascertained with some certainty. This I make to be 173 mm. If, however, we assume the two sides of the skull to have been symmetrical, and double the breadth measurement afforded by the sufficiently perfect right side, we obtain an approximate notion of the maximum breadth, which, on this principle, works out at 128 or a shade over. Thus we arrive at a cranial index of at least 74. The basion being absent, no basal height can be estimated, though it is pretty obvious that the skull is not to be classed as especially tapeinocephalic. There is considerable occipital development. The cranium is decidedly scaphoid; and that this is a normal feature, and not the accompaniment of premature synostosis, is deducible from the fact that the sagittal suture is not obliterated, but on the contrary well marked, just as the coronal and lambdoid sutures are also well in evidence. The side-walls are decidedly flat. The supra-orbital ridges, to judge from the right-hand ridge which alone remains, are fairly prominent, though not in such a degree as at all to resemble the brow-ridges of *Homo primigenius*, or indeed those of many a modern aboriginal skull from Australia. Finally, the skull is rather thick, with a rugged surface, suggesting that we are dealing with the remains of an adult male. I venture to conclude, provisionally,

that the skull is ancient, and so ancient as to be contemporaneous with the deposition of the low-level loess in which it was found. This was, presumably, washed down by floods from the neighbouring high lands so long ago that the sea has since had time to eat away a mile of intervening land. On the other hand, I would maintain that the skull is not to be associated with *Homo Breladensis*, the possessor of massively rooted teeth, which imply a correspondingly massive jaw with the rest of the cranium to match, including brow-ridges able to counteract the strain of such a bite; but, if pleistocene, is rather of the superior type that is manifested in the Cro-Magnon skulls, with high foreheads and reduced brow-ridges.

(3) Another piece of evidence, permitting some sort of correlation to be established between traces of man and the geological position in which these were found, comes from Tunnel Street, situated in a low-lying part of the town of St. Helier, about 32 feet above o. d. Here an excavation, made for a gas-holder in 1896, revealed the following section.¹



Synthetic Section, Tunnel Street, St. Helier, Jersey.

Proceeding from below upwards, we find the rock-bed covered with a layer

¹ For description see Dunlop, 'On some Jersey peat-beds,' 21^e Bull. Soc. jers., 1906, 350-4, who, however, studies the stratification on the basis of a 15-foot section; whereas, by the kindness of Mr. H. Morris, of the Jersey Gas Light Company, who has furnished me with admirably charted records of ten experimental borings, I am able to carry the section down to bed-rock at 30 feet.

of loess or yellow clay with angular stones, suggestive of diluvial conditions; or else in immediate contact with a blue clay, presumably of marine origin, though without shells, this blue clay having normally six to eight feet of the yellow clay upon it. On this rested a bed of sea-gravel, containing sea-shells (*Purpura lapillus*, L.) and water-worn pebbles. Above it came five to seven feet of peat containing tree-trunks. Here Dr. Dunlop himself discovered a polished diorite axe-head; whilst there were also found two teeth of an ox, possibly *Bos longifrons*, a species that often occurs in the lower of the Jersey peat-beds. Clearly, then, we are at the neolithic level. This peat-bed was divided, by two or three feet of blue clay and gravel containing sea-shells (*Purpura lapillus*, L., and *Trochus umbilicatus*, Mont.) and evidently of estuarine formation, from an upper peat-bed, without trees, and of no great thickness; and upon this rested a mass of recent alluvium, the result of the drainage of the neighbouring valley. Now let us concentrate our attention on the gravel occurring between the lower peat and the yellow clay towards the bottom of the section—a stratification which is frequently met with in sinking wells over all the lower part of St. Helier. On or near the upper surface of this gravel there occurred two fragments of pottery, not water worn, namely, the lip of a small vase, and part of its body ornamented with pit-like markings. This would not necessarily bring this gravel deposit within the neolithic horizon, since it is quite likely that, as is apt to happen with peat, the pottery has worked its way down through the pulpy mass. On or in this gravel, too, were found numerous flint flakes, none of them water worn, showing a bulb of percussion, but without secondary work upon them, those that I have seen being quite small and characterless. The only safe hypothesis is provisionally to connect the flint chips with the pottery, and to refer all alike to the neolithic period. Here, then, we fail to establish any definite traces of pleistocene man.

It only remains to add that, as contrasted with this almost absolute unconformity between the Mousterian stage (as represented by the two Cottés) and the beginning of the neolithic period, the series from this point onwards admits of clear determination. But, lest I exceed the limits of my theme, I must not descant on the glorious remains of the lower peat-bed still visible round the coast of Jersey when the conditions are favourable; as notably in September, 1902, when Mr. Sinel obtained a wonderful photograph of the forest-bed underlying the sands of St. Ouen's Bay (pl. LXV. 4). Fortunately, there exists some good literature dealing with the subject.¹ The map on page 450 shows the

¹ See Dr. Dunlop's already cited study, 'On some Jersey peat-beds,' and Mr. Sinel's papers, 'The submerged peat- and forest-beds of the Channel Islands' (reprinted from the *Guerns. Soc. Nat. Sci.*, 1909) and 'The relative ages of the Channel Islands' (35^e *Bull. Soc. jers.*, 1909, 429); also R. A. Peacock, *Sinkings of Land* (1868).

position of the submerged forests round the Jersey coast, namely, at Grève de Lecq, throughout St. Ouen's Bay, on the east side of Portelet Bay, and in St. Aubin's Bay under Noirmont, as well as from La Haule past St. Helier as far as Green Island, Le Hocq, and, if we go back forty years for our evidence, even La Rocque.

Conspectus of Stages in the Quaternary History of Jersey.—It is needless to remark that, considering the amount and quality of the foregoing evidence, any reconstruction of the succession of stages in the quaternary history of Jersey must be provisional, not to say premature, in the last degree. It is a process of making bricks without more than an occasional and dubious piece of straw. The attempt is made here simply in order to present a working hypothesis, to be altered freely as new information comes in, or as the available information is more minutely examined. I may remark also that it would be quite out of the question here to try to correlate the Jersey evidence with the vast mass of facts relating to the quaternary history of the Channel and the adjacent coasts.¹ Indeed, the elevations and submergences to which Jersey has been subjected have a significance of their own, even when so slight as to form almost negligible details in the general geological history of the Channel region. For it must be remembered that with 60 feet of elevation, or with 60 feet of eroded borderland restored to it, Jersey becomes continental, a change which, though geologically trifling, makes all the difference from the human standpoint.²

¹ By way of obtaining a theoretic background, however hypothetical, a passing reference may be made to M. Rutot's ingenious theories, since these deal in special detail with the North of France, at any rate from Belgium as far as the valley of the Seine. He accepts, as indeed do most authorities, Penck's four glaciations, one pliocene, the rest pleistocene. See A. Penck, *Archiv für Anthrop.*, N. F., i (1903). After each glaciation he supposes diluvial conditions to result from the melting of the ice, producing loess-depositing floods in the North of France, owing to a block in the drainage. Such a block, indeed, might easily occur if the present bed of the Channel were tilted up slightly at the westward end, and would make itself felt especially in the narrow part of the ancient bed of the Somme-Seine just north of the Casquets, namely, the chasm known as Hurd's Deep; though whether floods so caused would directly affect the Channel Islands is another question. Further, M. Rutot believes the men of Le Moustier to have come up from the south after the third deluge (severe), and to have inhabited the North of France during the interval (dry, with increasing cold) that led up to the fourth glaciation (relatively slight). This last glaciation, the subsequent deluge (also relatively slight), and an ensuing period of dry cold correspond, in his opinion, to late palaeolithic times, namely, Aurignacian to Magdalenian. See M. Rutot's later writings, especially 'Les grandes provinces quaternaires de la France,' *Bull. Soc. préhist. de France*, 1908, and 'Glaciations et Humanité,' *Bull. Soc. belge de Géol.*, 1910.

² Contrast the fact that about 120 feet of elevation are at present needed to bridge the Channel south-east of Dungeness, 180 south-east of Beachy Head, 240 south-east of the Start, and 300 south-east of the Land's End.

Pre-Mousterian.—(1) Submergence indicated by the 140-foot raised beach on South Hill.

(2) Submergence indicated by the 30-foot raised beach under the loess at Portelet and elsewhere, and by such a raised sea-cave as that at Le Cané de la Rivière.

(3) Submergence indicated by the scooping out of the two Cottés; with which event the 70-foot raised beach at St. Clement's and elsewhere may be provisionally connected.

The one absolutely solid fact on which it is possible to build is that the two Cottés must have been hollowed out before they were inhabited. It is hardly less certain that they are sea-caves, especially in view of the fact that a raised beach forms the bottom layer at the Cotte de St. Ouen. The reasons, such as they are, have already been given for putting the high-level submergence earliest, and a low-level submergence between this and the mid-level submergence. There is likewise evidence from another quarter that submergence to a greater or smaller extent preceded the final deposition of the loess.¹ Thus an excavation in Bath Street, in 1910, as I learn from Mr. Sinel, showed, below the lower peat, a drift of loess or yellow clay with angular stones, which in turn rested on a bed of gravel and shingle, presumably of marine origin, though without shells. Again, not only in Tunnel Street, but also in other parts of St. Helier, according to Dr. Dunlop,² the yellow clay lies on blue clay, sometimes with an intervening bed of large angular rubble, and this blue clay is just the sort of deposit that would be laid down by the sea. It is important to note that there are no traces of sand or shingle above the Mousterian floor of either Cotte, as would surely exist if either a high-level or a mid-level submergence had occurred after the Mousterian occupation. On the other hand, there is nothing to indicate whether the various remains of pre-Mousterian submergence are pleistocene or of still earlier date.³

Mousterian.—(1) Occupation of La Cotte de St. Ouen.

(2) Occupation of La Cotte de St. Brelade, with at least sufficient elevation to permit of land-connexion with the Continent.

The reason for assigning priority to La Cotte de St. Ouen is, as has already

¹ I say final deposition because the loess was probably forming in Jersey, as elsewhere, before Mousterian days. Thus there is good reason to regard the *älterer Löss* of the German geologists as of pre-Mousterian age, whilst their *jüngerer Löss*, on the other hand, may probably be regarded as partly Mousterian and partly post-Mousterian, that is to say, Aurignacian.

² See 36^e *Bull. Soc. jer.*, 115.

³ For Belgium M. Rutot assumes no considerable lowering of the land-level between the Diestian period at the beginning of the pliocene, and the Flandrian at the close of the pleistocene, i. e. post-glacial. See *Bull. Soc. belge de Géol.*, xxxiii (1909), 249.

been shown, simply the morphology of its implements; these seem to be Lower Mousterian, whilst those of the other cave are, perhaps, Middle or even Upper Mousterian. The connexion with the Continent is actually proved only by the remains of fauna found in the Cotte de St. Brelade, but might naturally be expected to cover both occupations alike. It is far simpler to postulate an elevation greater than the present by at least 60 feet; though it is possible, contrariwise, to imagine the level of the sea to have stood as high as now, or even higher. On the latter supposition, the land-connexion must have since been eroded away. This eroded land might have included cretaceous beds producing the material for the Mousterian flint implements, though these have rather the appearance of being fashioned from water-worn pebbles. Also, it might have included sandstone formations similar to those still found in patches on Alderney and the adjacent rocks, since sandstone pebbles are plentifully distributed along the Jersey beaches, whilst neolithic implements of sandstone are likewise not uncommon in the island.

Post-Mousterian.—(1) Final deposition of loess, with diluvial rainwash from higher land forming the earthy matter in which occur the Pontac bone of a horse and the Green Island skull.

It should be mentioned that the loess drift is likewise found below the present sea-floor.¹ This fact would seem to prove that the loess was at least in part deposited during a time of elevation. On the other hand, it must remain an open question whether these submarine beds represent an earlier or a later stage of the loess formation.

(2) Simultaneous or successive would be the formation of the 'head' filling up the Cotte de St. Brelade.²

(3) Simultaneous or successive would likewise be a return to the present level or possibly a slight submergence, as indicated by the gravel, with marine shells, intervening between the loess drift and the lower peat in the Tunnel Street section.

If the fragments of pottery and flint-chippings found on or in this marine silt be regarded as contemporaneous with it, the submergence would have to be referred to an early neolithic horizon. It has been already argued, however, that these remains of human handiwork may well have found their way down through the peat. The gravel appears to be merely estuarine, to judge from the fact that the shells are of a littoral type. It is to be noted that, if Jersey became insular at the close of the Mousterian period, and remained so until

¹ See Dunlop, section at North Pier given in *21^e Bull. Soc. jer.*, 356.

² M. Rutot remarks that there seems to have been a general filling-in and collapse of cave-shelters at the close of the Magdalenian period, and names it *l'époque du grand détritique*. See *Bull. Soc. belge de Géol.*, xxiv (1910), 70.

neolithic times, this reason would amply account for the absence of any clear trace of the later palaeolithic industries. Arguments from absence are, however, worth little.

(4) Considerable elevation of the land coinciding with the 'period of submerged forests'.

The lower peat contains the remains of fine trees, which could not have grown in the situations in which they now occur, for example, far out in St. Ouen's Bay, unless the land had stood at least 60 feet higher than it does at present. This amount of elevation would provide the land-connexion between Jersey and France which we know to have been utilized by immigrants of the early neolithic age.

(5) Submergence indicated by the raised beach existing above the peaty layer with neolithic remains at Green Island.

To judge by the fact that this raised beach corresponds with a 40-foot raised beach on Mont Ubé a mile away, from which Green Island was probably cut off at this time, the submergence would seem to have been at least to the extent of 20 feet below the present mean level. The marine silt with littoral shells that occurs between the two beds of peat in the Tunnel Street section must be treated as due to the same cause operating on a lower plane. Mr. Clement Reid assigns this last subsidence to late neolithic times, and gets a date for it of about 1500 B.C. or a few centuries earlier.¹

(6) Restoration to present level, and growth of the upper peat, a mere moss-peat of no great thickness.

Appended is a diagram showing those changes in the mean sea-level at Jersey which seem to be required by the foregoing considerations. Of course, no attempt is made to represent the duration of the successive periods. Submergence and emergence are used in a purely relative sense, and do not necessarily connote earth-movement. In marking the height at which Jersey becomes continental, no allowance is made for the former existence of intervening land now eroded away.

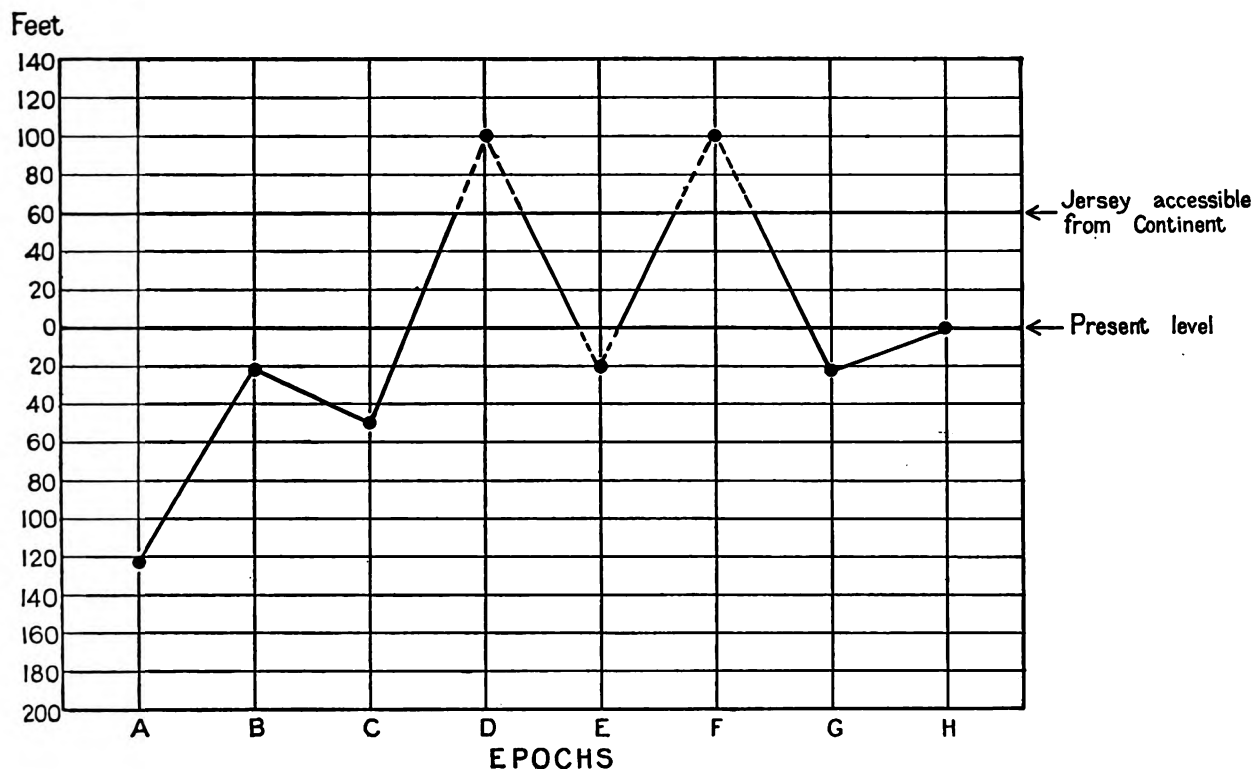
In conclusion, I would venture to insist that, in regard to pleistocene history, there is plenty of important work to be done in, and in the neighbourhood of, the Channel Islands by the archaeologist and the geologist acting in concert. As I have tried to show, Jersey in itself offers problems in abundance. The excavation of the Cotte de St. Brelade must be finished. The search for more palaeolithic sites, as well as for raised beaches and raised sea-caves, must be carried on. The geology of the plateau loess and of any layers that intervene

¹ See C. Reid, 'The Island of Ictis,' *Archaeologia*, lix (1905), p. 281.

CHANGES IN THE ELEVATION OF JERSEY

AS SHOWN BY THE CHANGES IN MEAN SEA-LEVEL

[N.B.—The difference between mean and high tide-levels, roughly 20 feet, must be added to get height of raised beaches; *e.g.* 120 feet submergence = 140 feet raised beach.]



PRE-MOUSTERIAN.

A. Submergence indicated by high-level r. b., South Hill (seemingly oldest because unique); probably pliocene. B. Submergence indicated by r. s-c., Le Cané de la Rivière; probably also by other low-level r. s-c.'s and r. b.'s, *e.g.* the r. b. below loess (with loess likewise underneath) at Portelet. C. Submergence indicated by mid-level r. b.'s (since one overlies upper cave at Le Cané de la Rivière), and by the two Cottés; possibly not very long before Mousterian occupation (to judge by cave-earth at La Cotte de St. Ouen).

MOUSTERIAN.

D. Emergence indicated by occupation of the two Cottés (since Continental fauna); middle pleistocene period.

POST-MOUSTERIAN.

E. Return to present level, or possible submergence, indicated by marine gravel, up to about 18 feet above o.d., below lower peat in Tunnel Street section; probably late pleistocene period. F. Emergence indicated by lower peat (the submerged forests needing at least 60 feet elevation to have grown in place); coinciding with early neolithic period. G. Submergence indicated by low-level r. b. at Green Island, and marine silt between upper and lower peats in Tunnel Street section; coinciding with late neolithic period. H. Return to present level.

between the lower peat and bed-rock must be investigated with greater attention to details than they have hitherto received. The material in the museum of the Société Jersiaise must be subjected to a rehandling of a thoroughly critical and exhaustive nature. And, finally, new evidence of all kinds, such as may warrant more decisive interpretations, must be called into existence out of the unknown.

XXI.—*Notes on an Anglo-Saxon Cemetery at Market Overton, Rutland.* By
V. B. CROWTHER-BEYNON, *Esq., M.A., F.S.A., Local Secretary.* With a
supplementary note by E. THURLOW LEEDS, *Esq., B.A., F.S.A.*

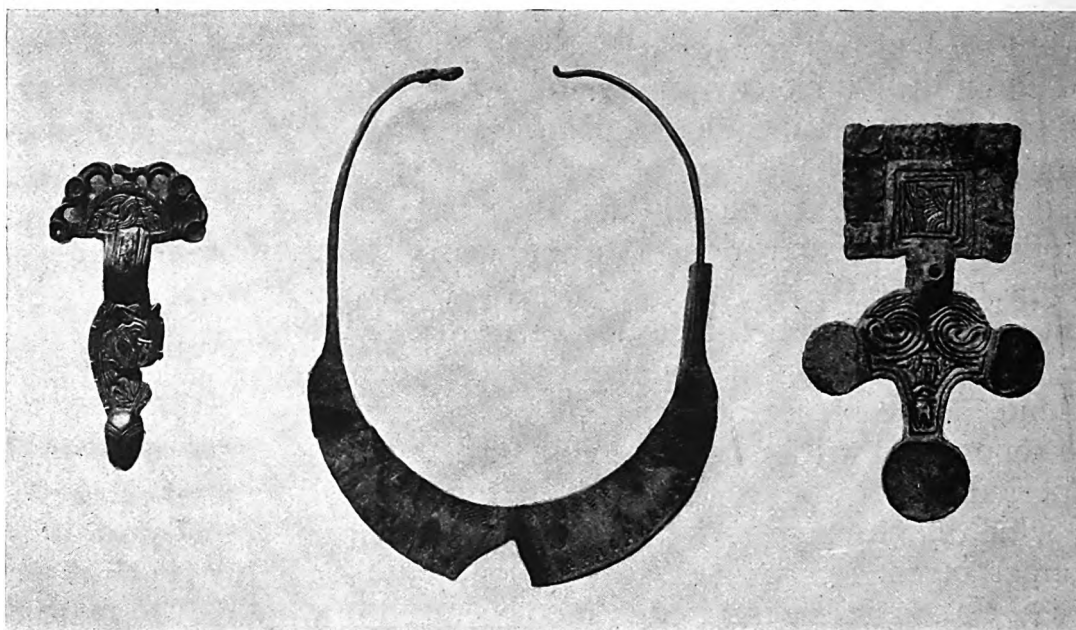
Read 30th March, 1911.

MARKET OVERTON is situated about a mile from the northern border of Rutland and a little under two miles south-west from the point where the three counties of Leicester, Lincoln, and Rutland meet. Here, in August 1906, iron-stone workings were begun on a fairly large scale, and these operations have continued to the present time and are likely to go on for a considerable period. In the course of the excavations a large number of antiquities have been found, ranging, in point of date, from the neolithic period down to mediaeval and later times. Some of the objects found were exhibited before the Society on Jan. 30th, 1908, when I had the honour of presenting a report as Local Secretary for Rutland.¹ The present paper deals with finds which have occurred since my 1908 report, and will be confined to a consideration of objects of the Anglo-Saxon period, which far exceed, both in number and interest, those of other periods which have come to light at Market Overton. It is quite clear that two distinct cemeteries existed here, separated by an interval of some 400 yards. The Saxon finds described in 1908 occurred in what may be distinguished as the North Cemetery, measuring approximately half an acre in area. The present series of relics were all met with in the South Cemetery, the size of which was apparently about double that of the other. In both cemeteries the quantity of human remains recovered was quite insignificant, the soil being evidently unsuitable for preserving the skeletons. It is a matter for the greatest regret that it has been found impossible to excavate the site scientifically, and that consequently little or no information is available as to the association of the relics one with another or the relative positions in which they were found. Nor is it possible to state anything as to the direction of the graves or the sex or age of the bodies. Among the twenty-five earthen vessels of various types which have been preserved, six contained fragments of teeth or bones, a fact which seems to suggest that cremation was in use to a limited

¹ *Proceedings*, xxii. 46.

extent as a method of dealing with the dead, but with such incomplete data it seems vain to attempt to draw definite conclusions as to the nature of the graves. The methods employed by the Ironstone Company are fatal to any attempt to collect the finds into grave-groups, and we are compelled, therefore, to treat them as a series of individual objects. The digging operations have extended some way beyond the area in which the graves were situated, and it seems probable that the limits of the cemetery have been reached and that the site is exhausted from the archaeological point of view.

Iron spear-heads occurred in the South Cemetery in considerable numbers, some thirty examples of various shapes and sizes having been preserved, of



(a) Silver brooch.

(b) Silver collar or torc.

(c) Square-headed brooch.

Fig. 1. Jewellery from Market Overton, Rutland. Nearly $\frac{1}{2}$.

which the largest measures 21 in. in length. To these may be added eight shield bosses. All the spears and bosses, however, are of well-known types and present no unusual features. Two fairly well-preserved horse-bits and three keys of characteristic shape have also occurred. A more unusual find, however, consisted of a number of iron fragments which appear to have been the mountings of a large bucket, possibly lined with bronze, as a small piece of that metal remained on one of the pieces. The finials of the loops to which the movable handle was attached take the form of drooping animal heads with open jaws, which may be compared to those so commonly seen on large square-headed brooches. The iron mountings of a large bucket from Sleaford, Lincs., preserved

in the British Museum,¹ bear considerable resemblance to those from Market Overton, though the scroll-work on the latter is rather more elaborate. The large bucket found in the Saxon tumulus at Taplow, Bucks., is described as being 'lined with plain bronze'.²

The pottery which has come to light at Market Overton has no great artistic merit. Of the twenty-five vessels found in the South Cemetery, eleven are small, undecorated, round-bottomed pots of domestic character, and only two of the remainder exhibit the characteristic Teutonic shoulder, while none at all have projecting bosses round the body. They vary in size and form, the largest being 10½ in. high and 26 in. in circumference, and the smallest 3¼ in. in height with a girth of 11 in. One pot has a somewhat unusual form of decoration, consisting of a series of longitudinal lines in relief, with a turn to the right at

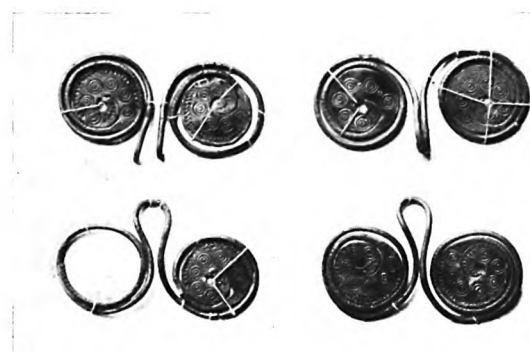


Fig. 2. Clasps of silver wire. Market Overton, Rutland. $\frac{1}{2}$.

the top—forming a device resembling a hockey-stick—repeated six times on the body of the vessel.

Beads have occurred in fairly large quantities, though they may not, perhaps, present any uncommon features. The prevailing material is amber, but a large number are of vitreous paste, some are of glass and rock-crystal, and a few are imitation pearls of small size, both single and double.

Perhaps the most interesting group of objects in this collection are the silver ornaments. The graceful torc or collar (fig. 1 *b*) is believed to be the only one of this pattern in the country.³ It measures 14 in. round the curve, and the fastening has been by means of a hook and loop, though the former is imperfect. The two ends of the ornament are round in section, but 4 in. from each end the metal is beaten out flat and increases in width towards the centre.

¹ *Archaeologia*, 1, pl. XXV, fig. 1.

² *Journ. Brit. Arch. Assoc.*, xl (1884), 64.

³ One found at Ipswich carries a bead: *Proc. Suffolk Inst. Arch.*, xiii (1909), 6, pl. IV, fig. 5.

The flat portion is ornamented with gilded triangular compartments, thrice repeated, and is further embellished with punch-marked decoration.

Equally pleasing is the series of hook-and-eye clasps of silver wire. The general principle is the same in all, and is in fact precisely that of the present-day hook and eye on a much larger scale. The two loops, corresponding to those by which the ordinary hook and eye are sewn on to the fabric, instead of making one complete circle only, are produced to form a spiral of several convolutions. A very similar pair of clasps was found at Kenninghall, Norfolk, and is now in the British Museum.¹ Another pair is recorded from Sleaford, Lincs. (*Arch.*, 1, pl. XXIV, fig. 6), a third from Beeby, Leicestershire, and a fourth from Twyford, in the same county.²

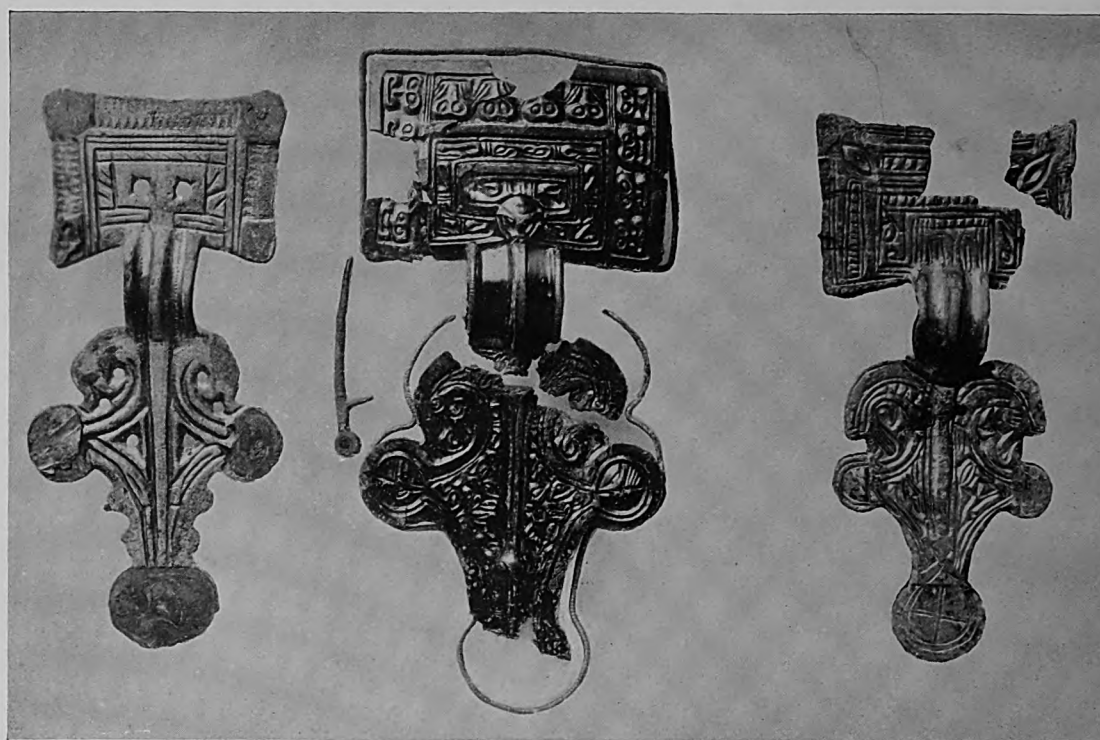
The two pairs of clasps, fig. 2, exhibit a variation of form which appears to be unknown from other sites. At a first glance at these examples, the centre of each spiral has the appearance of a flat disc, but on examination it will be seen that this appearance is caused by the wire having been beaten flat, leaving a small opening in the centre where the wire comes to an end. The 'discs' are $\frac{3}{4}$ in. in diameter and have been gilded and decorated by a series of punch-marks in the form of concentric circles. Hook-and-eye clasps of the type to which the Market Overton specimens belong are well known from Northern Europe, where they occur in some late finds of the Migration period, such as the Porskjæ moor find, and persist down to the Viking period.

Five fragments of fluted silver, measuring in the aggregate 7 in., have doubtless formed part of one or possibly more armlets, such as may be seen in the British Museum from Longbridge, Warwickshire, and Barrington, Cambs. The latter site also provides a parallel for an armlet of flat silver increasing in width at the ends.

Four discs or bracteates of silver have come to light, but none are perfect. The largest measures about 1 in. in diameter, and is decorated with two concentric circles of punched ornament, the centre consisting of a raised boss. A somewhat similar object occurred in the North Cemetery, and is figured in the coloured frontispiece of the *V. C. H. Rutland* (fig. 2), where it is erroneously described as having been found at North Luffenham. A small silver disc with a central boss was also found at Faversham, Kent, and is preserved in the Ashmolean Museum at Oxford. Of the other silver bracteates from Market Overton, two have the central boss, while the third is ornamented with a repoussé pattern of interlacing strap-work. The last named appears to have been cut down to its present size from a larger plate, and, if so, may be compared to the Lombardic crosses as regards the method of manufacture. The only other object of silver is a small penannular brooch with recurved ends.

¹ *V. C. H. Norfolk*, vol. i, pl. facing p. 340, fig. 1.

² *V. C. H. Leics.*, i, p. 236.

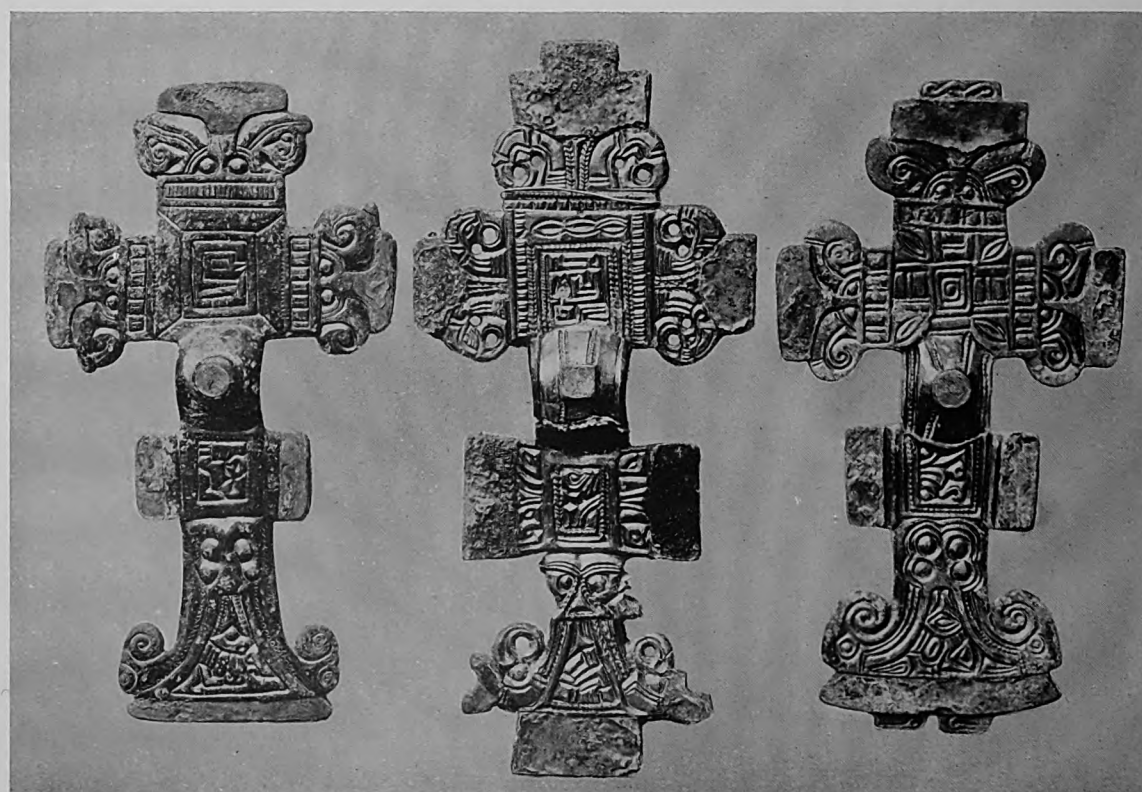


1

2

3

Square-headed brooches, Market Overton, Rutland. $\frac{1}{2}$



4

5

6

Cruciform brooches, Market Overton, Rutland. $\frac{1}{2}$

With regard to ornaments of bronze, a very interesting series of brooches of several distinct types has been collected from this site. Of square-headed brooches there are four examples, all ornamented with gilding, and three of them further enriched with silver plates. All have certain features in common, such as the rounded foot, the projecting lateral lobes, and the open-jawed beasts' heads (more or less conventionalized) on either side, below the bow. Pl. LXXI, fig. 1 is probably the earliest in date of the series, and, apart from the usual beasts' heads, has no sign of animal pattern in the ornamentation. Pl. LXXI, fig. 3 has an incised cross of double lines on the foot, and the upper angles of the oblong head show a tendency to develop the projections characteristic of the late examples of this type of brooch. A distinct impression of cloth appears on the metal in the upper part of the head. In fig. 1 c the lateral lobes are much accentuated, and with the foot combine to give a quasi-cruciform appearance to the lower part of this example. The bow has almost ceased to be functional, and is little more than a truncated pyramid, to which has evidently been attached an ornamental disc similar to those found upon brooches of the same type from Tuxford, Notts.¹ and Barrington, Cambs.² Silver plates are (or have been) attached to the circular projections, and also to the angles of the head of the brooch.

The group of brooches just described show a very remarkable similarity to some found at Ipswich in 1906.³ Indeed, the resemblance between fig. 1 c from Market Overton and fig. 9 (4) from Ipswich amounts almost to identity, and can hardly be accounted accidental. Scarcely less striking is the similarity of pl. LXXI, fig. 1 (Market Overton) and fig. 7 (3) (Ipswich), the only point of difference being that the perforations in the lower part of the brooch are, in the Rutland example, round holes, whereas in the other they are shaped to follow the design of the ornament. These brooches belong to a class which seems to be fairly well represented in Suffolk, Norfolk, Leicestershire, Northants, and Yorkshire, and which has also occurred in the south and west, while its original ancestry has been traced to Germany and South Scandinavia.⁴ The fourth specimen (pl. LXXI, fig. 2) in the square-headed group from Market Overton is sufficiently remarkable to merit a detailed description. It is unfortunately somewhat damaged, but not sufficiently to allow of any doubt as to its original form. The oblong head has no protruding angles, and is covered with zoomorphic ornamentation, while the central rib of the bow is embellished with an applied silver band. There is a well-defined midrib running from this to the foot, the extremity of which is missing, but a part of what seems to be an attenuated version of the 'horse-head', characteristic of the so-called 'long brooch', may be seen just above the break. The side lobes bear representations of human faces looking to-

¹ *Proceedings*, xxi. 35.

³ *Archaeologia*, lx, pp. 333-4.

² Library of Trin. Coll., Camb.

⁴ Cf. *Proceedings*, xxi, p. 233.

wards the centre, and in this particular, as well as in general style, the brooch may be compared to one from Fairford, Glos., figured by Akerman.¹ A peculiar feature of the present example consists of a frame or border of silver wire² which follows the outline of the brooch, and which has originally been brazed to the edge, but is now detached. Where this wire passes over the bow it has been riveted through the metal. Another unusual, if not unique, attribute of this brooch is the pin, which is of bronze, and which, instead of working by means of the usual hinge or coil, is fitted with a spur or heel-catch projecting at a right angle (or nearly so) from the shank of the pin. This heel-catch, pressing on the back of the brooch and acting like the fulcrum of a lever, would enable the pin, by its own elasticity, to be held securely in the hollow of the loop or catch attached to the lower part of the brooch. This type of pin is well known on the later examples of the 'animal-head' and 'box' brooches, whose evolution forms such an interesting feature in the archaeology of the island of Gotland in the Baltic, but it appears to be unrecorded among Anglo-Saxon brooches of the pagan period in this country.

Of the next class of brooch—the 'cruciform'—the present site has produced three good examples, all of an ornate kind. Though differing in detail, as can be seen by a reference to the illustrations, they display a strong general resemblance. The ornamentation is zoomorphic of a debased kind, and the date cannot be placed earlier than the seventh or late sixth centuries. Pl. LXXI, fig. 5 may be compared to a brooch from Saxby, Leicestershire.³ The rectangular lateral projections below the bow are of exaggerated size, which somewhat mars the proportions of the brooch, but the bow is sufficiently elevated to be of use, whereas in pl. LXXI, figs. 4 and 6 the bow consists of little more than a thickening of the metal. Pl. LXXI, fig. 4 finds a parallel in a brooch found at Rothley Temple, Leicestershire.⁴ In all three examples the bow is crowned with a solid stud, either square or round. It is interesting to note the different methods of treating what is fundamentally the same idea, employed in these three cruciform brooches. The figure just below the lateral wings on the lower part of the ornaments is of course derived from a face—either of a man or beast. In the first example (pl. LXXI, fig. 5) the eyebrows are formed of three parallel lines, and the eyes altogether have a reasonably natural appearance, though the nose is treated conventionally. In the next (pl. LXXI, fig. 6) the eyebrows are solid, the outer ends being brought round so as almost to meet the sides of the nose, where they terminate in round

¹ *Remains of Pagan Saxondom*, pl. VII.

² Cf. *Arch. Cantiana*, vi, 181, from grave CLIX at Sarre, Kent, pl. VI, fig. 1: 'an edging of thick chased silver-wire has apparently once run round its outer edge, as in the case of other fibulae of this pattern: only part of this remains.'

³ *V. C. H. Leics.*, i. 235.

⁴ Akerman, *op. cit.*, pl. XX, 2.

pellets. In pl. LXXI, fig. 4 the figure appears almost as a quatrefoil, with a pellet in each compartment. The cruciform type of brooch is the direct descendant of the earlier 'long brooch', the fan-shaped foot of the former being an exaggerated development of the nostrils of the earlier 'horse-head', while the knobs at the top and sides of the head of the 'long brooch' have become flat surfaces providing accommodation for the profuse ornamentation which came into vogue in the sixth century.

The round brooch is represented among the finds in the South Cemetery by three examples, two being of the 'applied' class, and the third of the kind known as the 'saucer'. Of the two former, one is imperfect and the other a mere fragment, but the 'saucer' brooch is in fair condition, and displays a design similar to that on the brooch found at Shefford, Beds.¹ The loop attachment and catch for the pin are well preserved at the back of the brooch. The North Cemetery at Market Overton produced two good examples of the 'applied' circular brooch, a form which is believed to have originated in this country.²

The open-work round brooch with swastika centre has also occurred in both cemeteries at Market Overton, and two from the South Cemetery are fairly perfect. The class of brooch, however, which is most strongly represented here is the annular, of which some fifteen examples have come to hand. Some of these are fitted with bronze pins, and are in excellent condition, but the majority have had iron pins, and these are for the most part rusted away. The ring part of the brooches varies in different specimens. In some it is flat or flattish in section, with or without punch-marked decoration; in others it is round in section, either plain or transversely ribbed. This type of brooch has occurred in considerable numbers in the East Riding of Yorkshire. Among the miscellaneous bronze articles found was a key-ring, $2\frac{1}{4}$ in. in diameter, worn by friction into a hollow at one part of the circle. Other bronze rings included in the collection may have formed part of horse-trappings. A much-corroded bunch of iron and bronze rusted together has doubtless been a chatelaine chain. It contains a fusiform object of bronze-gilt, having the appearance of a bead or swivel. A somewhat similar object was found near the hip of a skeleton at Gilton, Kent.³ The pin has been formed by rolling or bending a flat strip of bronze and brazing the seam. The flat head of the pin is pierced for the suspension of ornamental plates or spangles, as in the case of the pins found at Leagrave, Beds.,⁴ and Brighthampton, Oxon.⁵ Mention should also be made of a bronze buckle, which has been tinned and is ornamented with punch-marks. On the back is a very distinct impression of the garment to which it was fastened or over which it

¹ *Arch. Journal*, vii. 79.

³ *Invent. Sepulchr.*, pl. XII, 5 a, b.

⁵ *Archaeologia*, xxxviii, pl. III, fig. 1.

² *Proceedings*, xxii, plate facing p. 52.

⁴ *Proceedings*, xxi, p. 60.

488 AN ANGLO-SAXON CEMETERY AT MARKET OVERTON

was worn. Being of a type more usually associated with Kent and the South of England, its occurrence in Rutland is interesting. A few minor objects of bronze, such as a diminutive garter-buckle and a small object of spatula-like shape with remains of iron rivets, complete the list of finds in this metal.

There remain to be considered the only gold objects which have come to light in either cemetery, and a round-headed brooch of silver having certain peculiar characteristics. The articles of gold are a bracteate, a bead, and a spiral finger-ring. The first (fig. 3) has a diameter of $1\frac{1}{2}$ in., with a punch-marked border of triskeles and an inner line of embossed dots. Within is a more or less disintegrated figure of a horse, and above is a spirited representation of a bird. The loop of the bracteate is decorated with a line of dots in relief, and in the



Fig. 3. Gold bracteate. Market Overton. $\frac{1}{2}$.



Fig. 4. Gold bead. Market Overton. $\frac{1}{2}$.



Fig. 5. Gold ring. Market Overton. $\frac{1}{2}$.

centre of the ornament is a small hole so carefully punched as to suggest its having been made intentionally. Mr. E. T. Leeds has dealt more fully with this interesting object in a supplementary note to the present paper. The hollow gold bead (fig. 4) is about $\frac{3}{4}$ in. long, the shape being that of two truncated cones joined base to base. There is a transverse rib running round the line of greatest girth and several longitudinal ribs running from this to the opening at each end. The expanding ring (fig. 5) has a diameter of about $\frac{1}{2}$ in. and forms rather more than a complete coil and a half; the total length when extended would be about 3 in. It is slightly decorated with faint punch-marks.

The silver brooch (fig. 1 a), which is also dealt with in Mr. Leeds' notes, measures $3\frac{1}{2}$ in. in greatest length in its present state, but a small portion of the foot is unfortunately lost. The head is semicircular, with a border consisting of bird-heads, the eyes being represented by hollow sockets which have doubtless been filled originally with garnets or other ornamental material. The foot is elliptical in shape, and terminates with a fairly naturalistic animal's head. No other brooch of this type has been found in this country, so far as can be ascertained.

To judge by the objects recovered from the two cemeteries at Market Overton, there seems to be little evidence of any wide interval between the sites in point of date. The ornate square-headed brooch, the annular brooch (both

simple and with the swastika centre), and the 'applied' circular brooch all make their appearance in both. The pottery and beads also agree in type, while in both cemeteries spear-heads and shield-bosses have occurred in substantially similar proportions. When, however, we compare the finds at Market Overton with those at North Luffenham in the same county, where another Anglo-Saxon cemetery existed,¹ there is sufficient divergence of types to enable us to differentiate the two sites in date. At North Luffenham the simple 'long brooch' occurred in considerable numbers, whereas it is entirely absent at Market Overton. Again, the proportion of swords found at the former place is markedly large, while at the latter the sword is almost, if not altogether, wanting. Some of the pottery, again, from North Luffenham is more distinctively Teutonic than that from Market Overton, and includes examples of a far more elaborate character than any found on the latter site. On the other hand, we find several points of similarity, such as the elaborate cruciform brooch, the swastika-centred annular brooch, and the 'applied' round brooch, which are all common to both. It would appear from the evidence that the community at North Luffenham were not using their cemetery later than about A. D. 575, while at Market Overton the cemetery was hardly used earlier than about A. D. 550; so that in all probability there was a short period of overlapping in the use of the two sites. The parallels which have been cited for objects found at Market Overton are drawn from various places lying in many directions, and no doubt the list could be largely extended, but undoubtedly the closest connexion appears to exist with East Anglia, and is so striking as to afford clear evidence of long-standing and frequent intercourse. Nor is this difficult to account for on geographical grounds, for with such practicable waterways available as the Ouse, the Nen, the Welland, and the Glen there would be no serious obstacle to prevent a seafaring people such as these East Anglian settlers from penetrating within easy reach of the Market Overton settlement.

The Market Overton finds are the property of Major Wingfield, D.S.O., of Tickencote Hall, Rutland, on whose land they were found, and we are indebted to him for his kind permission to exhibit them before the Society. What the ultimate home of the collection is to be is a matter which is not yet decided, but that it will be carefully preserved and its value duly appreciated there need be no fear. For the present it remains in the custody of our Fellow Mr. W. H. Wing, who resides at Market Overton, and to whom the Society is deeply indebted for the time and care he has expended in connexion with the site and the discoveries which have been made upon it. Not only has he been indefatigable in his oversight of the workmen employed at the ironstone workings, so far as his various other duties have permitted, but he has also undertaken

¹ *Assoc. Archit. Soc. Rep.*, xxvi. 246 foll., and *ibid.*, xxvii. 220 foll.

the arduous and sometimes tedious duty of cleaning, mending, and arranging the various objects as they came to hand. Where such a large number of workmen are employed, a certain amount of leakage is wellnigh inevitable, but it is safe to say that, but for Mr. Wing's vigilance and the good relations he has established and maintained with the men, the Market Overton collection would never have attained its present extent and value.

I desire, in conclusion, to express my deep indebtedness to our Fellows Mr. Reginald Smith and Mr. E. T. Leeds for much valuable and kind help in the preparation of this paper.

Supplementary Note on the Gold Bracteate and Silver Brooch from Market Overton.
By E. THURLOW LEEDS, Esq., B.A., F.S.A.

THE bracteate from Market Overton (fig. 3) carries with it a special interest, as it belongs to a class of ornaments which occur with great frequency in North Europe, but which are but scantily represented in England. It is true that a large number of pendants of similar form found in Kentish graves are, strictly speaking, bracteates; but it is to the more distinctive class, whose evolution can be traced from coin and medallion types of the late Roman emperors, that reference is here made. In this class must be included such bracteates as those found at Sarre, Kent. They belong to a somewhat late series, with a very widespread diffusion ranging from North Germany to Scandinavia and England. Those types, however, which stand nearer in time to their Roman prototypes are very scarce in England. One remarkable example was found at the end of the seventeenth century in St. Giles' Field, Oxford,¹ and is now in the Ashmolean Museum (fig. 6). It belongs to a class derived from late Roman coins bearing the head of an emperor. It differs, however, in its details in so marked a degree from its continental parallels that our Vice-President, Dr. A. J. Evans, has long claimed that it may fairly be considered to be of Anglo-Saxon fabric. Is this the case too with the Market Overton example? It is primarily connected with a large and widely distributed series, ornamented with a device consisting of a rider on horseback, which is similarly derived from a common reverse found on late Roman coins.



Fig. 6. Bracteate from St. Giles' Field, Oxford. $\frac{1}{4}$.

Salin in a paper entitled 'De Nordiska Brakteaterna'² has subjected the bracteates of Northern Europe to a critical investigation, and has distinguished several subdivisions of the particular type above mentioned, coinciding in some measure with definite geographical areas. In all these the progressive stylization which characterizes all the northern zoomorphic ornament of the period is very marked. The figure of the rider is in course of time reduced to the head alone, of large size, and resting immediately on the back of the horse, while the horse itself loses to a large extent the semblance of its former self. So much so that in some cases it even has horns added. In the Market Overton bracteate the rider is entirely

¹ Plot, *Natural History of Oxfordshire*, p. 359. ² *Antiqvarisk Tidskrift för Sverige*, xiv, part 2, p. 1 ff.

absent. It has nevertheless features so closely resembling those found on some of continental types that it is worth while to compare them in detail.

The subdivisions of the class above mentioned which concern us here are two. They are numbered by Salin V and XII respectively.¹ The first he terms the Danish division, as all the examples known to him in 1899 come from Denmark except four, three of which are from South Sweden, and the fourth from Stavanger, Norway. Of these four only two have the bird portrayed, while of the Danish examples, fifteen in all, only two are without it (fig. 7). The second class he calls derivatives from the Danish division (fig. 8); they come chiefly from Norway and South Sweden, but two have been found in North Germany, namely, in the provinces of Holstein and Hanover. As the Market Overton bracteate resembles more nearly those of the latter division, it is perhaps advisable to examine this division first. One of its most striking features is the disposition of the body at



Fig. 7. Bracteates from Denmark and Skåne, illustrating the 'Danish' division.²



Fig. 8. Bracteate from Skåne, belonging to 'Danish-derivative' class.



Fig. 9. Bracteate from Denmark of intermediate type.

right angles to the neck. The result of this is that when the front legs are disconnected from the body, as is the case in some examples, the borders of the neck and body form a right angle, without doubt partly caused by the position of two bands which may be intended to represent a collar and surcingle. These in the earlier Danish class appear to be placed so close together as to meet on the withers. In some of the other subdivisions of this type they lie too far apart for this to happen. Secondly, the Danish derivatives seem to be marked by the absence of the off-side hind leg. The shape of the head and the disposition of the front legs in the Market Overton bracteate also can be paralleled from continental examples. But perhaps the most noticeable feature is the manner in which the parts of the neck and body inside the contour lines are embossed with low angled surfaces. This feature is found outside this division only among derivatives from a South Swedish class, three examples of which are cited by

¹ *Op. cit.*, pp. 46, 59, 101, and 106.

² Figs. 7, 8, and 9 from *Antiquarisk Tidskrift för Sverige*, xiv. 2, figs. 57, 58, 73, 74.

Salin with Danish provenances. It is, as Salin has suggested, probably due to the process of embossing the bracteates with the aid of a wooden matrix.

It will thus be seen that the decoration of the Market Overton example presents very close analogies to this northern division. It should be noted, however, that on none of the examples given by Salin in his table of representatives of this class does the bird appear, while, as has been shown, it occurs more often than not in the specimens belonging to his division V, the Danish division proper. Salin figures one bracteate, probably from Denmark, which he regards as an intermediate form (fig. 9). It has the characteristic embossing of the neck and body, such as occurs in class XII, but a stylized bird is portrayed in the field. The bird on the Market Overton bracteate is, however, portrayed in a very spirited manner, and is very similar to that on a bracteate from Denmark belonging to the earlier class (fig. 7).

There can be no doubt that the Market Overton bracteate is one of these intermediate forms, and this in spite of the poor execution. The shape of the foot also seems to support this view; it still retains more or less the semblance of a hoof, and has not suffered from the ever-increasing stylization which eventually led to the feet of all animals alike being rendered in a claw-like form.

Its place of manufacture is a more difficult matter to decide. The absence of the rider's head suggests that it was England, as the portrayal of the human head in profile during this period is very scarce in this country. The treatment of the legs is also unlike that seen on any Scandinavian types.

Everything seems to point therefore to its manufacture in England. At the same time it was almost certainly made by some one who had seen a Danish model not long before, perhaps one of the earlier Teutonic immigrants to our shores. He had, however, in that time forgotten how, or perhaps was not offered sufficient monetary inducement, to portray the human face; but he was sufficiently skilled in the execution of zoomorphic ornament to find no great difficulty in rendering the rest of the design.

On general grounds of comparison it may perhaps be assigned to an early date in the sixth century.

Whether or no the Market Overton bracteate is to be regarded as an importation may be left to individual opinion. There can, however, be little doubt that the remarkable silver brooch is not of English fabric. And as in the case of the bracteate, so here it is possible to arrive at a fairly definite conclusion as to its source. The radiated brooch with semicircular head-plate has a very widespread distribution, ranging from Southern Russia to England, but the diffusion of certain types can be narrowed down to more restricted areas.

Such is the case with the Market Overton brooch (fig. 1a). Brooches of this form with five knobs like birds' beaks belong in the main to a southern branch

of the Teutonic culture, where they are of frequent occurrence.¹ The oval foot is also a distinctive southern feature, and is found in a large series of brooches, sometimes with a square head-plate. Equally southern is the form of the animal-head finial.² It is imperfect in the Market Overton brooch, but enough remains to reconstruct the rest with certainty on the analogy of well-preserved examples from Germany and elsewhere. Its particular characteristic is the presence of horizontal bars between the eyes and the nostrils, which latter in most cases are merely designated by a flat plate in place of the globular or curling nostrils familiar on Scandinavian brooches of the same period. The most noteworthy point of this brooch is, however, the ornamental designs on the semicircular head-plate and on the foot. Salin has shown that the development of the Teutonic zoomorphic ornament, to which these designs belong, lies to the credit of the northern branches of the Teutonic race, and that it spread from the north south-

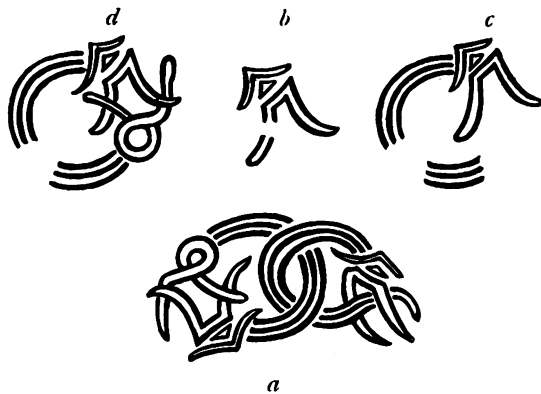


Fig. 10. Detail of design on semicircular head-plate of silver brooch from Market Overton. $\frac{3}{4}$. a. Whole design. b, c, d. Details of one animal, viz. b. head, c. head and neck, d. head, neck, and one leg.

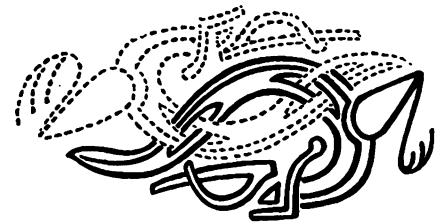


Fig. 11. Design on foot of silver brooch from Market Overton (restored). $\frac{3}{4}$.

wards, in part possibly along the lines of tribal movements such as those of the Lombards. It is not often that this class of design is so well executed in Central Europe as in the present instance. A somewhat close parallel is afforded by the large radiated brooch from Tuscany in the British Museum, figured by Kemble, *Horae Ferales*, pl. XXVIII, fig. 1. It is quite easy to distinguish two animals, both on the head-plate and on the foot (figs. 10, 11). The former pair are, it is true, incomplete; of one only the head and neck (or possibly neck and body combined), of the other the head, neck, and a loop representing one leg, are portrayed. On the foot of the brooch are two other animals; in each case the head with crossed jaws, the neck, a front leg, and the body are depicted. In both cases the animals are interlaced,

¹ Salin, *Altgermanische Tierornamentik*, pp. 36, 37.

² *Op. cit.*, p. 186.

but while on the head-plate this interlacing consists merely of entwining the bodies themselves, on the foot it is extended even to the contour lines of the bodies.

Salin, in assigning a tripartite division to his study of the evolution of the Teutonic zoomorphic ornament, relies on the fact that at the stages of its development at which he places the beginnings of his styles II and III, certain marked innovations may be observed in the execution of the design, innovations which had a far-reaching and lasting effect upon the course of evolution which the zoomorphic ornament followed thenceforth.

Thus the transition from style I to style II is distinguished by a gradually increasing predilection for interlacing two or more animals so as to produce a running or a balanced pattern, the form in which it occurs on the Market Overton brooch. But while this trait still holds good in the period of style II, and even after that, the additional feature of the interlacing of the contour lines as well is introduced. It is accompanied by certain other changes, notably in the shape of the head and the disposition of the eye. Particularly common in the Southern Teutonic area is the type of head distinguished by the sharply angled contour line at the back, with the eye set right in the angle, such as appears on the Market Overton brooch; but, as Salin remarks, it was known to the artificers who employed the canons of style I, as it is used side by side with heads of a form strictly belonging to that style. There are, then, two main points to be considered in deciding the place and the date of the fabrication of this brooch. These are the form of the brooch and its ornament. The brooch type is, as has been shown, undoubtedly a southern one. It is, moreover, the first example of a radiated brooch in which the semicircular head and oval foot are combined that has been found in England. Salin, writing in 1904, cites examples from Hungary, Bohemia, Italy, and Germany, and adds, 'von Frankreich und England kenne ich bis jetzt kein einziges Exemplar'.¹ The oval foot in conjunction with a square head-plate has a much wider diffusion; it occurs as far north as East Prussia and Hanover, and examples are known from England.² But the distribution of the other combination is quite restricted; it appears to be best known from Bavaria (*e.g.* Nordendorf) and Italy (*e.g.* Castel Trosino).³ The term 'radiated', though more strictly applicable to brooches of this form with plain knobs, is, however, not out of place as applied to such brooches as the Market Overton example, as the birds' heads are merely a more extravagant form of knob. Their employment on such brooches is practically universal in the South Teutonic area, and is not met with in the north. An interesting and perhaps late instance of their use in the south

¹ *Op. cit.*, 38. Two examples from Burgundy, France, are included in the Evans Collection (Ashmolean Museum).

² *e.g.* V. C. H. Kent, i, plate opp. p. 360, fig. 5; *Archaeologia*, xxx. 132, pl. xi, fig. 3.

³ *Monumenti Antichi*, xii, pl. vi-ix.

is to be seen on the gold brooch from Jouy-le-Comte, Dépt. Seine-et-Oise, France, ornamented with filigree and with cloisons set with garnets and other stones, one in the form of a fish.¹

It appears, therefore, that it is to South Germany that the fabrication of the Market Overton brooch must be assigned. The design gives the clue to its date. The end of style I in the north coincides with the end of the sixth century, and there is reason to believe that style II was introduced into South Europe at a date almost contemporaneous with its development in the north. In the Market Overton brooch the interlacement of the contour lines is not emphasized in the manner in which it commonly occurs in the north, where the separation of the contour lines begins even at their junction with the head. In this case it merely consists of a slit in the body itself, and the contour lines are interlaced at that point only. This may well represent a transition stage, and as the other details in no way exclude its ascription to the end of style I, it is probable that it need not be assigned to a later period than the end of the sixth century.

The torc, in point of form, appears to be unique among relics of the period found in this country. Continental examples of the pattern are, however, not wanting. A bronze example of similar form figured by Müller came from a grave in the island of Bornholm. It was found behind the head of a skeleton, and therefore was conjectured to have served as a diadem. But originally the form certainly belongs to the class of torcs. Müller mentions three other torcs of this type as having been found in Bornholm and Zealand.

¹ Barrière-Havy, *Les Arts industriels de la Gaule*, pl. B², fig. 6.

XXII.—*A Wardrobe Account of 16-17 Richard II, 1393-4.* By W. PALEY
BAILDON, Esq., F.S.A.

Read 6th April, 1911.

THE royal officer known as the Keeper of the Wardrobe was, we may suppose, first appointed to look after the royal clothes, but at an early date his functions were enlarged until he became one of the most important officers of the Household. I extract the following from Mr. Scargill-Bird's *Guide to the Public Records* (3rd ed., p. 246):

The King's wardrobe . . . was anciently one of the Royal Treasuries into which certain portions of the revenues of the Crown were paid, and from which disbursements were made, as well for military and naval as for civil and domestic expenses. It represented, in fact, with regard to the expenditure of the State, a group of government offices comprising an Admiralty, War Office, Foreign Office, and Lord Chamberlain's department, and including the functions of a Keeper of the Privy Purse. According to the author of *Fleta*, to the Treasurer of the Wardrobe were committed the expenses of the King and his family, and in conjunction with a Clerk of the Wardrobe, who was associated to him as comptroller, he was to keep a record of whatever belonged to his office. He was to keep the King's money, jewels, gifts, and private receipts, and to make a separate roll thereof, to be returned annually into the Exchequer. In another roll were to be entered the daily and necessary expenses, which comprised the buying of horses and carriages and many other articles; also gifts, alms, and oblations; the wages of knights and archers; the wages of messengers, and foreign fees, presents, or accommodations; and the expenses of the wardrobe, including the buying of cloth, furs, wax, spices, linen, and such like; together with purchases of jewels, &c., goldsmiths' work, and the wages of the royal falconers and huntsmen.

From this account it will be seen what a very wide field is covered by the records of the Wardrobe, which begin in 14 John, 1212-13. Very few of them have been published; this Society printed one for 28 Edward I, 1299-1300, as far back as 1787. They are full of interest, and the Fellows will remember that the identification of the celebrated Gold Cup, now in the British Museum, and many details of its history, were obtained from these records.

The present document covers the period from April 24, 1393, to April 23, 1394. It was found by a friend of mine among a lot of Court rolls he was

examining in a private muniment room in the Midlands. He called my attention to it, and as it is not available to the public, I obtained permission to copy it. It deals mainly with the original functions of the wardrobe, that is, with clothes and materials, but has some information about jewellery, arms, and accoutrements.

I propose to divide my notes into (1) persons, (2) jewellery, &c., (3) arms, &c., and (4) materials and costume.

PERSONS.

The King himself is mentioned frequently in connexion with various articles, but there is little of personal interest. He had some new scarlet hose for a journey into Wales, and a short scarlet gown made for St. George's Feast. He appears to have been fond of jousting, since several payments were made in connexion with that sport, which seems rather out of keeping with one's preconceived notions of his character and habits. Hunting-gowns were made for him and some of his friends, and his hunting-knives are mentioned. Some very curious garments made for him to wear at a masque or other festivity will be mentioned later.

The Queen, Anne of Bohemia, is only mentioned once, in connexion with the repair of a collar and certain other things.

Among other members of the Royal Family referred to is the Duke of York, Edmund of Langley, the King's uncle, for whom a *jupe* of blue velvet doubled with white tartarin was made at a charge of 2s. 6d.

A long gown of scarlet, given by the King to the Earl of Marche, cost 18d. to make, and a gold chain was made for the Countess of Marche at a cost of 4s. 4d. The Earl was the King's second cousin.

Nine knights are mentioned.

A saddle covered with cloth of gold, late belonging to Sir John Devereux, was bought for £5 6s. 8d.

Nine hunting-gowns of green cloth were made for the King, Sir George Felbrigge, Sir Simon Felbrigge, Sir Stephen le Scrope, Sir John Lutelbury, Sir Philip la Vache, Sir William le Scrope, the chamberlain, Sir William de Arundell, and Sir Thomas Mortimer. These gowns cost £4 10s. 3d. Sir George Felbrigge also had a piece of cloth of gold, with golden lions on a ground of white and black, and some fur of bys. Sir Baldwin Radyngton had a short coat of Kendal cloth.

The only other person who calls for special remark is a certain Nikill Henxtman. His whole outfit seems to have been provided; boots, hose, leggings, linen sheets, coats, doublets, and gowns, including a long gown of the livery of the grooms of Monsieur del Marche. I have not identified this individual, but

I think he may have been the Court fool or hunchback. The gown like those of the Earl of Marche's grooms suggests that Nikill was lent for some festive occasion.

JEWELLERY, &c.

There is not a great deal to note under this head, but there are some items of interest; they nearly all occur in the bills of Wynald the Goldsmith.

He charged 12*d.* for mending a gold ring containing *lignum dominicum*, which must, I think, mean a piece of the Holy Cross, though it is not quite clear.

Richard's badge of the White Hart appears several times. A collar of the Queen's livery, a brooch, and a hart of 'cokill' were repaired at a cost of 5*s.* Cokill is used for shell of any kind, and probably means mother-of-pearl. A gold hart set with stone (*petra*) and pearls cost 33*s.* 4*d.* *Petra* is evidently some kind of stone for which the clerk had no special name, as, for instance, a piece of malachite on which the hart was 'lodged'. Mending and re-enamelling two gold harts cost 26*s.* 8*d.*

A gold chain for the Countess of Marche cost 3*s.* 4*d.*

ARMS.

Arms and armour must have come into some other account, there is so little here.

Jousts are mentioned incidentally. Mending a saddle for the jousts at Christmas last, with a stuffed pillow and red leather for covering it, cost 20*d.*; leather harness and making two *frendes* for the jousts cost 2*s.*; two surcingles of twine with double threads and large buckles and thongs, for the jousts, cost 10*s.* Mending a jousting saddle, with a new pillow, &c., cost 2*s.* 6*d.*

Spurs. Engraving and gilding a pair of spurs cost 10*s.* Two pair of latten spurs, prepared with white and green, cost 6*s.* 8*d.*

A baslard garnished with lockets of silver-gilt and a hilt of murret cost 20*s.* Another with silver-gilt lockets and chape cost 17*s.* A third, garnished with silver, given to Edward Standissh, cost 12*s.*

A chape and a pendant for a sword, the silver being found, and gilding the same, cost 12*s.* 7*d.*

A pair of coffers for keeping armour in cost 16*s.*

Bows and arrows. A round bow cost 2*s.* 4*d.*, eight bolts for the same 14*d.*, two dozen cords for bows 13*d.*, and a glove for drawing the bow (*ad tractandum*), 2*d.*

A hutch of cardboard, to keep bows in, cost 12*d.*

A leather case for bolts cost 3*s.* 4*d.*

A pair of gloves, apparently for archery purposes, cost 2*d.*; twelve bolts 2*s.*

ACCOUTREMENTS.

Three harnesses, with cruppers, poytreles, and reins, studded with long bars of latten, and the crup with six pendants, and the joints and pendants with great bosses of latten, and great cignets [*? seynettes*] within, cost £4. These were evidently the open-work trappings which we see so frequently on the hind-quarters of horses in illuminated MSS. of the period. Broad straps arranged diagonally, crossing at right angles, with bosses at the intersections and swans in the spaces. As I understand the entry, each harness had six pendants; it is unfortunate that they are not more fully described.

MISCELLANEOUS ARTICLES.

Points cost 3*d.* a dozen, others 6*d.* a dozen; they were bought in considerable quantities.

A collar garnished with harness of latten, for the lord's greyhound, cost 14*d.*

Gilding the belt, locket, and other harness of a hunting-knife cost 6*s.* 8*d.*, white leather for the belt 4*d.*; making a chape for the knife and a pendant of white and green for the belt, with gold for the same, cost 5*s.* 11*d.*

Two little bells for the lord's great belt cost 16*d.*

A pair of 'patyns' for the lord, 4*d.*

A little coffer for trussing the lord's jewels cost 13*d.*

Two brushes cost 7*d.*

A case for combs cost 2*s.* 8*d.*, and a pair of scissors and a mirror for the case cost 12*d.* and 5*d.* respectively.

A saddle for the lord's mails cost 12*s.*

MATERIALS.

Both in material and colour Richard's tailors had a large variety to choose from.

Cloth of gold was red, white, blue, and black.

Velvet was white, green, blue, black, and red.

Silk was green and white.

Satin was white only.

Cloth was black, scarlet, white, green, violet, sanguine, and blue.

Tartarin was black, green, and white.

Cloth of damask was black and green.

Taffeta was green only.

Buckram was black only.

Frieze was sanguine, green.

Ray, a striped material, is generally described by reference to its ground, which was sanguine, green, russet, powdered.

Fustian was white only.

Other materials were Brabant cloth, Kendal cloth, brown russet, blanket, blanket cloth, 'soupedevyn', 'red faldyng', 'black streit', black kersey, linen cloth of 'reynes', and 'westfall'.

The prices vary in a most remarkable way, showing a large range of qualities. The price of cloth of gold is not given; perhaps it was not sold by the yard. Red velvet cost 13s. 4d. the yard, and the best scarlet cloth 12s.; sanguine cloth 10s. 6d., white velvet 8s., white satin 6s. 9d. Linen and Brabant cloth were sold by the ell; silk was sold by the ounce, and thread by the pound. The lady who sold silk is called the 'silk-wife', corresponding to the more familiar ale-wife and fish-wife.

The furs, used largely for trimming, were ermine, minever, bys, budget, gray, cristy gray, and calibre. Bys was the most expensive, costing 18s.; the 'furrure', cristy-grays were 8s. 4d. each, budgets 4s. each, lamb skins 1s. 10d., ermines and minevers 14d. each; while backs of fine gray were only 2½d. each.

COSTUME.

The garments mentioned are gowns, hose, doublets, short gowns, sleeves, which appear in many cases to have been detached, cuffs or wrist-bands (*manicae*), boots and shoes, leggings, whalebone pikes, shirts, hunting-gowns, breeches (*bracce*) once only, 'bodies', 'jupes', hoods, collars, 'straight garments', 'hancelins', dancing doublets, long cloak, hats. Most of these do not call for comment, and I propose to mention only a few.

The jupe has a curious history. Both word and garment are Arab in origin. The *jubbah* or *jibbah* was and is a long loose outer garment of white material worn as a protection against the sun, especially over armour. The garment was adopted by the crusaders, and as they had no name for it they called it as the Eastern folk did. In Spanish this became *aljubah* (with the article prefixed as in alchemist, &c.), in Italian *juta*, and in French *jupe*, which was the form adopted in English. The garment first appears in England on military brasses of the late thirteenth century. The brass-rubbing fraternity have invented three names for it: the original long loose form they call a 'surcoat', a later and shorter form they call a 'cyclas', while in its last abbreviated pattern they dub it a 'jupon'.

The early surcoat was a long loose sleeveless garment, worn over armour, and reaching well below the knees. Originally it appears to have been quite plain, but early in the fourteenth century it was embroidered with the wearer's

arms. About 1325 it became shorter, not reaching below the knees—this is the form known as the *cyclas*; it was closer fitting about the body, but sometimes has a fullness below the waist, giving the effect of a skirt. The later *jupon* was a still shorter and closer-fitting form of the *cyclas*, reaching to mid-thigh only, losing the skirt-like appearance, and apparently fitting fairly tightly round the thighs. It came in about 1350, and disappears from brasses and monuments early in the fifteenth century, but remains in glass windows much later. The heraldic *jupon* as an article of ladies' wear is seen frequently in windows of the fifteenth century; I do not remember any examples on brasses or effigies, but should not be surprised to hear that there are such. The nomenclature used by various writers is very confused, since almost each one has his own pet names for things. Thus, many writers speak of the 'sleeveless cote-hardie' worn by women, but that is really a *jupe*. The coat had sleeves, the *jibbah* and its derivatives had none, and they were thus the more easily put on over the coat, hence *surcoat*. It is probably owing to this fact that the English for *jupe* is *small coat*, *petticoat*. I cannot say precisely when the *jupe* was first used by persons not wearing armour. It is frequently seen in MSS. of the late fourteenth and early fifteenth centuries, with the sleeves of the coat or doublet thrust through the shoulder apertures of the *jupe*, which was generally of a different colour. It is a garment of this description that occurs so frequently in this wardrobe account. No fewer than fourteen are mentioned, two of which were of cloth of gold, and we must conclude that they were the height of fashion for the moment. The subsequent history of *jupe*, word and garment, is distinctly curious. Most articles of underwear of both sexes started as outer garments. Thus, the shirt and (*rubesco referens*) the chemise are descendants of the Saxon outer garment, the smock. New and fashionable articles of attire are naturally worn outside, where they can be seen and admired, and so the older and more primitive garments pass gradually, often very gradually, to a modest and unseen retirement. Some unknown Beau Brummel of an early date must have taken it into his head some fine morning to wear his sleeved coat over his sleeveless *jupe* or *petticoat*, thereby setting a new fashion. The long waistcoat of late Stuart times is the *jupe* worn in this way, and the modern garment, which the wearer calls a waistcoat and the maker (for some mysterious reason) a vest, is the same thing cut short at the lower edge. It will thus be seen that while man has retained the upper part of the *jupe* or *petticoat*, he has surrendered the name and the lower portion to his women-folk. St. Martin divided his cloak vertically; the *jupe* was dimidiated horizontally. If you look at the *jupons* on the well-known Hastings brass at Elsing you will see, as I mentioned just now, that they are all pleated into a fairly full skirt below the waist; cut off the upper portion, and you have left the *jupe* or *petticoat*, rather short, it is true, of the illustrated paper advertisements and the Great White Sales.

The *Historical English Dictionary* gives quotations for the use of the word petticoat, as meaning a man's waistcoat, in 1674 and 1736.

Two garments, described in detail, are the gems of the collection, a dancing doublet and hanselyn,¹ of which we can piece together a very minute description, made for the festivities at Christmas. They were made of white satin, costing 5s. 9d. a yard, and took nine yards between them. The cost of making was 14s. for the hanselyn and 4s. for the doublet. £6 was paid for embroidering the hanselyn with leeches, water, and rocks; it was embellished with fifteen whelks and fifteen mussels of silver gilt, and fifteen cockles of white silver. The doublet was embroidered with gold orange trees at a cost of £5, and adorned with 100 oranges of silver gilt, weighing 2 lb. $\frac{1}{2}$ oz. Troy. The total cost of these two garments was over £24. Probably connected with the costume were thirteen pairs of hose, of black and white, and green and white, made for Christmas, green and white silk fringe, and possibly a gown of green damask embroidered with a band and cuffs of hops, which cost £4.

The constant recurrence of green and white, which is well shown here, suggests that they were Richard's livery colours, for the moment at any rate, but I do not find them recorded as such.

WARDROBE ACCOUNT FROM APRIL 24, 1393, TO APRIL 23, 1394.

Garderoba ab in crastino Sancti Georgii Martyris, anno regni Regis Ricardi Secundi post conquestum xvjmo, usque idem festum proximum sequens, anno xvijmo, per unum annum integrum.

*Johannes Creke.*²

In j virga iij quarteriis panni nigri pro caligis domino faciendis, precium virge iijs.,	vjs.	
Item pro factura iij parum caligarum de dicto panno cum linea tela,	ijs.	ijd.
Item pro itinere domini usque Walliam, j virga j quarterium scarleti pro caligis, precium virge xjs.,	xijjs.	ixd.
Et pro j virga j quarterium panni albi, precium virge vjs., ad partendi cum predicto scarleto,	vjs.	vjd.
Et pro j virga j quarterio panni viridi, precium virge iijs.,	vs.	
Et pro j virga j quarterio de panno albo, precium virge iijs.,	vs.	
Et pro tela linea pro dictis viij paribus caligarum,		xxd.
Et pro factura earundem,	iijs.	
Item contra festum sancti Georgii, pro iij virgis scarleti pro j gowna facienda usque ad mediam tibiam, precium virge xjs.,	xxxijjs.	
Et pro iij virgis de panno nigro pro duplicacione ejusdem goune, precium virge ijs. viijd.,	vijjs.	
Et pro j virga j quarterio scarleti pro manicis duplicatis, precium virge xjs.	xijjs.	ixd.

¹ The hanselyn was a loose outer garment of some sort; Chaucer (*Parson's Tale*) speaks of 'kuttid sloppes or haynselynes'.

² The names printed in italics are written in the margin of the roll.

504 A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4

Et pro vj virgis panni viridi pro j gouna facienda ad mediam tibiam, precium virge iijs.,	xxiijs.	
Et pro j virga j quarterio scarleti pro caligis faciendis, precium virge xjs.,	xiijs.	ixd.
Et pro j virga j quarterio de albo panno, precium virge vjs.,	vjs.	vjd.
Et pro j virga j quarterio panni viridi, precium virge iijs.,	vs.	
Et pro j virga j quarterio de albo panno, precium virge iijs.,	vs.	
Et pro ij ulnis linee tele pro dictis viij paribus caligarum liniendis,		xxd.
Et pro factura predictarum viij parum caligarum,	iijs.	
Et pro ij virgis panni nigri pro caligis et manicis, precium virge iijs.,	viijs.	
viiijl. ix. ix.		

Penston.

Et pro j ulna linee tele pro eisdem caligis liniendis,		xd.
Et in vij duodenis punctuum, precium duodene ijd.,		xxjd.
Et in filo et sapone emptis pro garneamentis,		ijd.
ijs. ix.		

Wynald, aurifaber.

In emendacione j anuli aurei habentis lignum dominicum inclusum,		xijd.
Item in emendacione j colere de liberacione domine Regine, j nouch et j cervi de cokill,	vs.	
Item pro factura et opere j cervi aurei cum petra et perles impositis,	xxxiijs.	iiijd.
Item pro imposicione j harnesii pro zona super uno novo tissue viride et albo,		viijd.
xls.		

G., cordewaner.

In ij duodenis et v paribus sotularibus boteux et chauxsimlez, precium parium vjd.,	xvjs.	xjd.
In j pari ocrearum pro domino,	iijs.	iiijd.
Item pro clapsis [sic] ad easdem,		xxd.
Item in ij paribus pykes de baleyn,		xxd.
In j pari sotularum pro Nikill Henxtman,		iiijd.
Item in emendacione ocrearum pro eodem,		vjd.
xxiijs. vd.		

Penston.

In dimidia virga dimidio quarterio velveti albi pro j manicis [sic] goune domini,	vs.	
In ij ulnis tele Flandrensis pro linura j doubelet pro domino,		xxijd.
In dimidia virga et j clavi tartarini nigri pro manicis j goune panni nigri,		xxd.
In viij virgis bokeram nigram, precium virge xijd., pro linura predictae goune,	viijs.	
In xiiij virgis de taffeta viridi pro linura j goune date magistro Johanni Middelton, precium virge viijd.,	ixs.	iiijd.
In dimidia ulna tele de Reynes pro pulvinario domini cooperiendo,		xviijd.
Item in ij virgis j quarterio fustien pro eisdem emptis, precium virge viijd.,		xviijd.
xxviij. xd.		

Willelmus Charneye.

In j nova cella pro mala domini cum toto apparatu,	xijs.	
In j novo pannello pro j cella sommaria,	ijs.	
In j pari de reynes pro j freno pro mala cum ij bokeles,		iiijd.

A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4 505

Item in emendacione j celle pro hastiludiis contra Natalem Domini proximum preteritum per prius non computatum propter defectum parcelle cum j pilwe stuffato et la stuff cooperato cum coreo rubro, xxd.
 Item pro coreo harnesii [pro] hastiludiis et pro factura ij frendes, ijs.
 Item pro ij soursengles de twyn cum tela duplicatis et boucles grossis et thonges pro hastiludiis, xs.
 xxvijs.

J. Creke.

In j virga j quarterio panni nigri pro ij paribus chaux simlez faciendis, precium virge iijs., vs.
 In dimidia ulna linee tele pro eisdem, vd.
 In factura predictarum ij parium chauxsimlez, xijd.
 Item pro factura iiij parium caligarum pro domino, ijs.
 Item pro j ulna panni linei empta pro eisdem caligis, xd.
 ix. s. iij d.

W. Wilteschire.

In vj dorsis de grey fyn expensis in colera et manicis j goune panni nigri, presium dorsi, ijd. ob., xvd.
 Et pro opere circa eandem gownam furrandam, xvjd.
 In iiij ermyns expensis in purfyle et manicis j goune panni auri rubei, precium pecii xiiijd., iijs. viijd.
 Et pro operacione furrure ejusdem goune xvjd.
 Item in iiij ermyns expensis in purfile colere et manicum j goune de velvet, precium pecii xiiijd., iijs. viijd.
 Et pro operacione furrure ejusdem goune, xvjd.
 xiijs. vijd.

Penston.

In iiij ulnis j quarterio linee tele de reynes pro pannis lineis pro domino faciendis, precium ulne iijs., ix. s. ix d.
 In factura ij camisium pro domino de eodem panno, vd.
 xs. ijd.

G. Reynald.

In j cella nuper domini Johannis Devereux cooperta panni auri, empta de Gruff[ith] Reynald, 106s. viijd.
 106s. viijd.

Penston.

In vj virgis dimidia tartarin viridis pro linura j goune viridis longe pro domino, precium virge ijs. viijd., xvijs. iiijd.
 Item in ij virgis j quarterio fustien pro j doubelet pro domino faciendo, precium virge viijd., xvijd.
 In j ulna et dimidia linee tele pro linura ejusdem doublett, precium ulne xd. ob., xvd. ob.
 xxs. jd. ob.

J. Creke.

In iiij virgis dimidia panni viridi emptis et datis Magistro Johanni Middleton per dominum, precium virge iijs. xd., xiijs. vd.

506 A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4

In dimidia virga dimidio quarterio panni nigri et dimidia virga dimidio quarterio panni albi pro caligis faciendis domino,	viijs.	
In dimidia ulna linee tele pro ij paribus caligarum liniendis,		vd.
In factura ij parium caligarum de panno predicto,		xijd.
Item in xxv virgis iij quarteriis panni viridi emptis, precium virge iijs. vjd., plus in toto jd. ob., et dividitur pro ix gounis venaticis datis per dominum, videlicet, j gouna pro seipso, j pro Georgio Felbrigge, j domino Simoni Felbr[igge?], j domino Stephano Lescrope, j domino Johanni Lutelbury, j domino Philippo la Vache, j domino Willelmo le Scrope, camerario, j domino Willelmo Darundell, et j domino Thome Mortymer,	iiij <i>li</i> .	xs. iij <i>d</i> .
In j virga j quarterio panni viridi et j virga j quarterio panni albi pro caligis, precium virge iijs.,	xs.	
In j ulna linee tele empta pro linura iiij parium caligarum predictarum,		xd.
Item in factura dictarum iiij parium caligarum pro domino,	ij <i>s</i> .	
	v <i>li</i> .	vs. xjd.

W. Crowmere.

Item in iiij virgis panni viridi pro j goune [<i>sic</i>] facienda pro domino, precium virge iijs.,	xvjs.	
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Swynmour.

In j arcu rotundo empto pro domino ijs. iiij <i>d</i> .,	ij <i>s</i> .	iiij <i>d</i> .
In viij boltes emptis pro eodem,		xiiij <i>d</i> .
In ij duodenis cordis pro arcubus emptis,		xiiij <i>d</i> .
In j cerotheca ad tractandum empta pro eodem,		ij <i>d</i> .

J. de Camera.

In j houc de cardeblod empt pro arcubus domini imponendis,		xij <i>d</i> .
Item in cordis emptis pro arcubus domini,		ij <i>d</i> .
In j virga dimidio quarterio panni nigri emptis apud Sarum pro caligis pro domino faciendis,	iiij <i>s</i> .	xd.
	xxvjs.	xd.

Totalis xxx*li*. vijs. iiij*d*. ob.

J. Creke.

Item in di. verge di. quart. de drap noir pour chauxsembles,	iiij <i>s</i> .	
Item pour di. verge di. quart. de drap blank,	iiij <i>s</i> .	
Item pour facion de ditz ij pare chauxsembles,		xij <i>d</i> .
Item pour toille as ditz ij pare chauxsembles,		vd.
Item pour j verge j quart. de drap verd pour chaux, pris la verge iiij <i>s</i> .,	vs.	
Item pour j verge j quart. de drap blank pour parter, pris la verge iiij <i>s</i> .,	vs.	
Pour toille pour iiij pare chaux,		xd.
Item pour facciun de iiij pare chaux,	ij <i>s</i> .	
Item pour dimi verge dimi quartier de drap noir pour chaux,	ij <i>s</i> .	vjd.
Item pour dimi verge dimi quartier de drap blank pour partier,	ij <i>s</i> .	vjd.
Item pour toille pour ij pare chaux,		vd.
Item pour facon de ij pare chaux,		xij <i>d</i> .
Item pour dimi verge dimi quartier de drap verd pour chaux,	ij <i>s</i> .	vjd.
Item pour dimi verge dimi quartier de drap blank pour partier,	ij <i>s</i> .	vjd.

A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4 507

Item pour toille de ij pare de chaux,		vd.
Item pour facon de ij pare de chaux,		xijd.
Item pour dimi verge dimi quartier de drap verd pour chauxsemblez,	ijs.	vjd.
Item pour dimi verge dimi quartier de drap noir pour chaux,	ijs.	vjd.
Item pour dimi verge dimi quartier de drap blank pour partier,	ijs.	vjd.
Item pour toille de iij pare de chaux,		vijd.
Item pour facon de iij pare de chaux,		xviijd.
Item pour dimi verge dimi quartier de drap noir pour chauxsemblez,	iijs.	
Item pour dimi verge dimi quartier de drap blank pour partier,	iijs.	
Item pour toille de ij pare chaux,		vd.
Item pour facon de ij pare de chaux,		xijd.
liiij. jd.		

Item in j pari ocrearum empto pro Nikill Henxtman apud Hampton cum clapsis pro eisdem,	ijs.	iijd.
ijs. iijd.		

Penston.

In iij duodenis punctuum emptis pro domino,		xijd.
In j collara garnis' cum hernesio de auricalco pro leporario domini,		xiiijd.
In xxvj crochettis emptis pro camera domini,		xijd.
In j ulna j quarterio panni de Braban pro braccis pro domino faciendis,		xvjd.
In factura v braccarum de eodem panni,		ijd.
In iij virgis et dimidia panni nigri pro linura j goune de sanguino frasio una cum dagges et j bende pro eadem gouna, precium virge iijs.,	xs.	vjd.
xvs. ijd.		

Wynald aurifaber.

In emendacione ij ollarum argenti quarum quelibet continet dimidiam lagenam,		xijd.
Item in j labro auri facto pro j zona domini, ponderans ad valorem auri,	ijs.	viijd.
Item in deauratione j cultelli venacionis, videlicet, zone, loket, et alii harnesii,	vjs.	viijd.
Item pro coreo albo pro zona dicti cultelli,		iiijd.
Item pro factura j chape dicti cultelli et j pendant ad zonam de albo et viridi, plus ponderans quam vetus harnesium per ijs. vijd., cum factura et auro ad idem xld.,	vs.	xjd.
Item in ij campanellis ad magnam zonam domini, ponderans,		xvjd.
xvijs. xjd.		

Crowmere.

Item pro iij virgis iij quarteriis de broun russet, precium virge vs.,	xviijs.	ixd.
Item pro iij virgis de sangwyn frisato, precium virge ijs.,	viijs.	
xxvjs. ixd.		

J. Sporiere.

Item pro sculptura et deauratione j parium calcarium,	xs.	
Item pro ij paribus calcarium de laton apparatorum cum albo et viridi, precii paris iijs. iiijd.,	vjs.	viijd.
Item pro apparacione j paris calcarium de laton,		xxd.
Item pro apparacione j paris calcarium nigrorum apparatorum cum laton,	ijs.	
xxs. iiijd.		

Selkwyffe, Matilda Baleye.

Item pro j corps de albo et viridi serico pro le waste, ponderans ij uncia j quarterium et dimidia, precium uncie xxij <i>d.</i> ,	iijs. iiij <i>d.</i> <i>q.</i>
Item pro j corps de albo et viridi serico longitudine j virge et dimidie, ponderans ij uncie et dimidia et dimidia quarterii, precium uncie xxij <i>d.</i> ,	iijs. ix <i>d.</i> <i>ob.</i> <i>q.</i>
Item pro iij quarteriis filii Londonie,	xviij <i>d.</i>
Item pro j uncia de serico Londonie,	xiiij <i>d.</i>

Johan Otley. Liberatio domini contra Natalem Domini.

Item in ij pannis aurei, campo albo et nigro, cum leonibus auri, pro domino et domino Georgio Felbrigge emptis,	ix <i>li.</i>
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Butterley.

Item in ix virgis radiati campo sanguineo et vij virgis et dimidia panni violetti emptis pro liberatis iij scutiferorum, precium virge utriusque xxj <i>d.</i> ,	xxviijs. x <i>d.</i> <i>ob.</i>
In xxj virgis radiati campo viridi et xv virgis panni blonketti, precium virge utriusque xix <i>d.</i> , pro vij valettis,	lvijs.
In xv virgis radiati campo poeree et pro x virgis soupedevyn, pro vj garcionibus, precium virge xvj <i>d.</i> ,	xxxiijs. iiij <i>d.</i>
In viij virgis radiati campo russeto, pro ij pages, precium virge xiiij <i>d.</i> ,	ixs. iiij <i>d.</i>
Item in iij virgis panni blodii emptis pro liberata Johannis de Kepston, clerici, precium virge iijs. iiij <i>d.</i> ,	xiijs. iiij <i>d.</i>
xvj <i>li.</i> xiijs. viij <i>d.</i> <i>ob.</i>	

J. Asshele, sherman.

In tonsura panni pro liberata domini ut supra, continente iij pannos et dimidiam et j virgam, quolibet pannus continens xxiiij virgas, capiens per pannum xvd.,	iijs.
Item in batellagio Johannis de Kepston et Johannis Penston inter Lon- donium et Westmonasterium per diversis vicibus pro dicto panno liberato emendo una cum portagio ejusdem panni,	xx <i>d.</i>
vs. viij <i>d.</i>	

Wyldschire.

Item in j furrura de bys empto pro liberata domini Georgii de Felbrigge, Item in x furruris agnorum emptis pro liberatis scutiferorum et valle- torum, precium furrure xxij <i>d.</i> ,	xviijs. iiij <i>d.</i>
Item in j furrura boget empti pro liberata Johannis de Kepston, clerici, xls. iiij <i>d.</i>	iijs.

Penston.

Item in ij paribus pannorum lineorum emptis pro Nikcil Henxtman,	xx <i>d.</i>
Item in furbiacione j cultelli venatici et unius gladii domini cum vaginibus ad eosdem de novo facta [<i>sic</i>],	ij <i>s.</i> ij <i>d.</i>
Item in j baselard garniso cum lokettis argenteis deauratis cum manubrio de murret pro domino empto per Standissh,	xxs.
xxiijs. x <i>d.</i>	

Georgius Cordewaner.

In xxxij paribus sotularum emptis pro domino, precium paris vij <i>d.</i> ,	xviij <i>s.</i>	vii <i>j d.</i>
In vij paribus de pykes de baleyne emptis pro domino,	vs.	xd.
Item in j paire de chauxsymelez, j paire de boteux et ij paire de soilers,	ijs.	iiij <i>d.</i>
Item in cordulis emptis pro arcubus domini,		iiij <i>d.</i>
In j caas corei empto pro peculionibus domino imponendis, emptis per Swynmour,	iijs.	iiij <i>d.</i>
xxxx <i>s. vd.</i>		

Houeden.

Pro factura j jupe duplicate usque ad dimidiam tubiam de panno nigro,	xvii <i>j d.</i>	
Item pro factura j capucii de panno nigro,	vii <i>j d.</i>	
Item pro factura j pari manicarum duplicatarum de predicto panno nigro,	v <i>j d.</i>	
Item pro factura j jupe de ray duplicate cum blanketo simili cum j capucio duplicato pro j garg,		xij <i>d.</i>
Item pro factura unius jupe usque ad medietatem tubie de rubeo panno de auro,	ijs.	v <i>j d.</i>
Item pro factura colere unius viridis velveti cum dimidia manica de albo velveto embroudato,	ijs.	
Item pro factura j jupe usque ad dimidiam tubiam de scarleto duplicate cum panno nigro,		xvii <i>j d.</i>
Item pro factura j jupe duplicate panno viridi usque ad dimidiam tubiam,		xvii <i>j d.</i>
Item pro factura ij parium manicarum de scarleto duplicatarum,		xij <i>d.</i>
Item pro factura j garneamentis stricti de albo fustien de liberata Montegew,	iiij <i>s.</i>	
Item pro factura j jupe sengle de viridi ray partite cum viridi panno pro Nikell,		xij <i>d.</i>
Item pro factura j jupe longe de panno nigro duplicate cum nigro boke-ram de liberata regis et manicarum duplicatarum cum nigro tartarin,	ijs.	
Item pro factura j doublett de nigro panno de Damasco,	iiij <i>s.</i>	
Item pro factura j jupe usque ad dimidiam tubiam de blodio velveto duplicate cum albo tartaryn de liberata Ducis Eboraci,	ijs.	v <i>j d.</i>
Item pro factura j jupe viridis et melioris viridi cum j bende sengle,	ijs.	v <i>j d.</i>
Item pro factura j jupe longe de viridi panno duplicate cum viridi tartaryn et j capucio [<i>sic</i>] duplicato,		xvii <i>j d.</i>
Item pro factura j jupe de panno de Kendale de liberata domini Baldewyni Radyngton,		xv <i>j d.</i>
Item pro factura j doublett de albo fustien sine manucis,	ijs.	
Item pro factura j jupe usque ad dimidiam tibiam de albo panno de auro,	ijs.	v <i>j d.</i>
Item pro factura j jupe de frise cum j bende de albo et nigro, duplicate cum nigro,	ijs.	
Item pro factura j jupe de russet,		xvii <i>j d.</i>
xxxix <i>s.</i>		

Penston.

In pari de patyns emptis pro domino,		iiij <i>d.</i>
In j doublett de fustein empto [pro] Nikell Henxtman,	iijs.	vii <i>j d.</i>

Symme.

In j zona empta pro domino,		iiij <i>d.</i>
Item in ix virgis de satyn albo emptis pro j hancelyn et j tunica ad tripudium pro domino contra Natalem,	ljs.	vii <i>j d.</i>

510 A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4

In factura j cathene auri pro domina Comitissa Marchie consorte domini,		
una cum auro eadem imposito ad valenciam <i>xd.</i> ,	iijs.	iiij <i>d.</i>
Item in j parva cofre empta pro jocalibus domini trussandis,		xiiij <i>d.</i>

lxjs. *vd.*

Houedene.

Pur la facion d'une longue goune de scarlet, oue un chaperon double,		xviiij <i>d.</i>
Item j goune de rouge frise line oue blankett a Nikell,		xij <i>d.</i>
Item pur le garnisshire d'une pylch,		iiij <i>d.</i>
Item pur le facion d'une goune tanque a dimi jambe de ray frise, partie		
oue verd frise, lyne de blanket,		xviiij <i>d.</i>
Item j doublett de blank fustien pur Nikell, pur la facion,		xvj <i>d.</i>
Item j goune a dimi jambe de rouge drap d'ore,	ijs.	vj <i>d.</i>
Item j goune tanque a dimi jambe de noir et blank drap d'ore,	ijs.	vj <i>d.</i>
Item pur amendement d'une garnement de noir et rouge velvet oue		
losenges,		vj <i>d.</i>
Item pur facion d'une longue goune del livere des gromes Mounsieur del		
Marche, lyne oue blanket pur Nikel,		xij <i>d.</i>
Item j longue goune de scarlet, de donne le Roy pur Mounsieur del Marche,		xviiij <i>d.</i>
Item j longue goune de vierd drap de damask, del donne de Roy,	ijs.	vj <i>d.</i>
Item j longue goune de blu drap d'ore,	ijs.	vj <i>d.</i>
Item j longue cloche de meisme le drap,	iijs.	iiij <i>d.</i>
Item pur j doublett de pleyn blank fustien, oue manches d'autre fustien,	iijs.	
Item pur j court goune de rouge drap d'ore, del donne le Roy,	ijs.	
Item pur j hancelet de blanc satyn embroude,	xiijs.	
Item pur j daunsyng doublet de blanc satyn embroude,	iijs.	
Item pur j doublet, le corps de rouge drap d'ore et les manches de rouge		
velvet,	iijs.	
Item pur j chapon de blu velvet,		iiij <i>d.</i>
Item pur chaperon de noir drap,		iiij <i>d.</i>

xlxs. viij*d.*

Johan Creke.

Pur dimi verge dimi quartier de drap noir, le xxvj jour d'Octobre, pur		
chauxsemblez, pris du tout,	iijs.	
Item meisme le jour, pur dimi verge dimi quartier de blank, pur partier,	iijs.	
Item pur facion de ij paire chauxsemblez, noir et blank,		xij <i>d.</i>
Item pur toille pur lez ditz chaux,		<i>vd.</i>
Item pur iiij verges de scarlett pur j longue goune, pris la verge xijs.,	xlvijs.	
Item pur ij verges j quartier de rouge faldyng pur j page, pris la verge xiiij <i>d.</i>	ijs.	vij <i>d.</i>
Item pur ij verges et dimi de blankett pur lynyng, la verge a <i>vj<i>d.</i></i> ,		xxj <i>d.</i>
Item pur j quartier de noir et blank pur dagges del goune le dit page		vj <i>d.</i>
Item le primer jour de Novembre, pur dimi verge dimi quartier de noir		
pur chauxsemblez,	iijs.	
Item meisme le jour, pur dimi verge dimi quartier blank pur parter,	iijs.	
Item pur la facion des ditz ij paire chauxsemblez,		xij <i>d.</i>
Item pur toille as ditz ij paire chauxsemblez,		<i>vd.</i>
Item le vij ^{me} jour de Novembre, pur ij verges et dimi de streit noir pur		
ij paire chaux, la verge ijs.,	vs.	
Item pur facion des ditz ij paire de chaux,		xij <i>d.</i>
Item pur toille as ditz ij paire chaux,		<i>vd.</i>

A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4 511

Item le xij jour de Novembre, pur iij verges de scarlett quex feurent donez a Richard Wegge, pris la verge ix ^s .	vjd.	xxviijs.
Item le primer jour de Decembre, pur ij verges iij quartiers noir pur chaux encountre Nowel, la verge vjs. iiij ^d .	xd.	xvs.
Item meisme le jour, pur j verge j quartier verd pur chaux, la verge a vs.	iiij ^d .	vjs.
Item meisme le jour, pur j verge j quartier blank, pris la verge vs.	iiij ^d .	vjs.
Et pur ij verges iij quartiers blank pur parter ovesque le noir et verd, la verge a vjs. iiij ^d .	vd.	xvijs.
Item pur facion de xiiij paire de chaux de noir et blank et verd et blank, encontre le feste de Nowell,	vjd.	vjs.
Item pur toille pur les ditz xiiij paire chaux,	viiij ^d .	ijs.
Item pur iiij verges et dimi de scarlet pur David Vaghham, William Assh, John Herberger et William Herte, la verge a xjs.	vjd.	xlixs.
		xli. xjs.

W. Venne.

Item pur j chape et pendant d'une espeie, as queux l'orfeverer trova d'argent a la somme de ijs. viij ^d .	vij ^d .	xijs.
Item pur l'amendement de ij cerfs d'or et le amaillere de nouvelle,	viiij ^d .	xxvjs.
Item en c pommes de oringe d'argent susorrez pur j daunsyng doublet fait par W. Mallynges et soun compaignon, broudereres, poisant ij ^{lb} . et di. <i>unc</i> .	ij ^d .	lvijjs.
Item pur xv welkes et xv muscles pur j hancelyn blank fait par W. Venne, pois ix <i>unc</i> . de pois de Troie, iiij ^d . meyns, pris la <i>lb</i> . xxviijs. come desuys,	viiij ^d .	xxs.
Et pur la facion et pur l'endorreure des pommes, welkes et muscles susditz, pris pur la pece ix ^d . et horspris un de avauntage,	vjd.	xvijs.
Item en xv cokles d'argent blancs pur le dit hancelyn blank, pois iiij <i>unc</i> . et di. de pois de Troie, ij ^d . meins,	iiij ^d .	xs.
Et pur la facion de les ditz xv cokles, pris la pece, iiij ^d .		vs.
Et pur j paire de poynettes de scarlet embroudez de 'Ay', ¹		xijjs.
Et pur un altre paire de poynetz de soie noir dieux foitz embroudez oue une ourtye,		xijjs.
Item pur l'enbroudure d'une ancelyn blank oue leches tout le garnement oue ewe et rokkes,	vj ^{li} .	
Item pur j paire de poynettes enbroudes de hoppes et pur j bende de hoppes a le goune verd de damask,	iiij ^{li} .	
		xxij ^{li} . xiijs. xjd.

W. Mallynges, tillere.

Item pur l'enbroudure d'une dauncyng doublet de satyn blank embroudez oue arbres de pommes de oringe, pur l'or et lour overaigne,	cs.
	cs.

Maude Baleye.

Item in ij <i>unc</i> . di. et j quartier de frenges de soie blank et verd, pris le <i>unc</i> . xxd.	vij ^d .	iiijjs.
Item di. <i>lb</i> . de file de Loundres,	xd.	
Item di. <i>lb</i> . de file noir, blank et rouge,	xd.	
Item j quartier de soie de Loundres,	iiij ^d . ob.	

¹ In the MS. this word has lines drawn round it.

512 A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4

Item j <i>unc.</i> de soye noire et blank,	xiiij <i>d.</i>	
Item iiij laces de soie blank, noire et rouge pur doublettes,	xij <i>d.</i>	
Item pur ij verges iiij quartiers et j nail de frenges de soie blank et noir et or, qe poise de soie ij <i>unc.</i> , pris le <i>unc.</i> xx <i>d.</i> et le or poise ij <i>unc.</i> et di. et j quartier, pris le <i>unc.</i> iij <i>s.</i> iiij <i>d.</i> ,	xijs.	vjd.
	xxjs.	ijd. ob.
<i>Willelmus Charneye.</i>		
En iij paires tranelles oue schakeles et tourettz et loynes,	iijs.	
Et pur j chevestre double oue double reynes pur coursers,	xx <i>d.</i>	
Et pur ij reynes a un altre chevestre,	viiij <i>d.</i>	
Item pur iiij houces novelx pur iiij coursers Mounsieur [?],	vs.	
Item pur le amendement de ij chevestres et pur j reyne delivere a Partrich,		viiij <i>d.</i>
Item pur iiij harnois oue cropers peytrels et freynes clowes oue longe barres de laton et le croupe oue vj pendantz et les joyntures et pendantz oue grantz boces de laton et grantz seynettes dedeinz, la peice xxvjs. viij <i>d.</i> ,	iiij <i>li.</i>	
Item pur le amendement d'une selle pur les justes, j novel pilwe et les loynes novelx, et iiij staples et anelles,	ij <i>s.</i>	vjd.
Item pur j paire de styropletheres pur Mounsieur,		xij <i>d.</i>
	iiij <i>li.</i>	xiijs. vjd.
<i>Penston.</i>		
In j paire de cofres emptis pro armuris domini custodiendis,	xvjs.	
Item in j curtena empta de blodi card pro garneamentis domini salvo custodiendis cum cordulis ad idem emptis,	iijs.	vjd.
<i>York.</i>		
In ij camisiis de panni de reynes emptis pro domino cum factura,	xs.	iiij <i>d.</i>
<i>George Beneyt.</i>		
Item pur ij doussein et vj paires de soilers boteux et chaussemblez, pris le dousein vijs.,	xvijs.	vjd.
Item pur vj paires de baleyne pikes, pris le paire x <i>d.</i> ,	iijs.	ijd.
	ljs.	vjd.
<i>W. Wildsshire.</i>		
Item pur le fourrure de une goune de drap d'or oue menever et pur iiij ermyns pur les maunches et coler, pris la piece xiiij <i>d.</i> , et pur l'overage de y celle xvjd.,	vjs.	
Item pur j goune de russet furre oue gray et pur ij tymbres et x dos de fyn gray ad ijd. ob. pur les manches, pris le tymbre viijs. iiij <i>d.</i> , oue xvjd. pur l'overage,	xxs.	jd.
Item pur j tymbre et di. et iiij dos, pris le tymbre vjs. viij <i>d.</i> , et pur vij dos pur l'amendement d'une coler d'une goune de blu velvet, pris la piece ijd. ob., oue l'overage xvjd.,	xiijs.	vd. ob.
Item pur iiij ermyns, pris la piece xiiij <i>d.</i> , pur le purfiler d'une coler et manches d'une goune de rouge drap d'or fourre de menever, oue xvjd. pur l'overage,	vjs.	
Item pur ij tymbres et di. et vij dos de fyn gray, pris le tymbre viijs. iiij <i>d.</i> , achatez pur le parfouyire [?] d'une goune de scarlet oue les manches, oue xvjd. pur l'overage,	xxiijs.	vij <i>d.</i> ob.

A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4 513

Item pur j pilche noir achetes pur Mounsieur,	iijs.	
Item pur j gounne de drap d'or noir furre de pure pur ij tymbres et xij ventres pur les manches, pris le tymbre vjs. viij <i>d.</i> , et iiij ermyns pur purflere d'un coler et maunches, pris la piece xiiij <i>d.</i> , oue xvjd. pur l'overage,	xxjs.	iiij <i>d.</i>
Item pur ij tymbres de fyn gray pur le purfler d'un oiler et les manches d'une gounne de drap d'or rouge, furre de cristy gray, pris le tymbre viijs. iiij <i>d.</i> , oue xvjd. pur l'overage,	xvijs.	
Item pur le fourrure d'une gounne verd de damask oue menever,		xvjd.
Item pur le fourrure d'une gounne de raye, del livere le Counte de Kent, oue ventres de calabre,		xvjd.
	cxiijs.	ij <i>d.</i> [<i>sic</i>].

Penston.

Pur j verge di. de velvet rouge pur j paire de manches, a xiijs. iiij <i>d.</i> la verge,	xxs.	
Item pur ij alnes de lynge toille pur lynure d'une doublet d'or [<i>sic</i>] pris l'aln xjd.,		xxij <i>d.</i>
Item pur ij verges de blanket et di. pur lynure d'une gounne frise del liveree del senescal, a xvij <i>d.</i> la verge,	iijs.	vjd. ob.
Item pur iiij aln de lynge toille pur j hancelyn, pris l'aln ix <i>d.</i> ,	ijs.	iiij <i>d.</i>
Item pur iiij aln de Westfall pur stoffure de meisme le hancelyn, pris l'aln vjd.,	ijs.	
Item pur vj verges de fustien pur lynure de meisme le garnement, pris la verge viij <i>d.</i> ob.	iijs.	iiij <i>d.</i>
Item pur ij alnes de lynge toille pur j doublet pur daunsyng, pris l'alne viij <i>d.</i> ob.		xviij <i>d.</i>
Item pur ij alnes de lynge toille pur lynure del dit doublet, pris l'alne xjd.,		xxij <i>d.</i>
Item pur ij alnes de lynge toille pur j bende, pris l'alne viij <i>d.</i> ob.,		xviij <i>d.</i>
Item pur ij verges et di. de satyn blank a meisme la bende, pris la verge vjs. viij <i>d.</i> ,	xvjs.	viij <i>d.</i>
Item pur j verge di. de fustien pur manches d'une doublet, pris la verge viij <i>d.</i> ob.,		xij <i>d.</i> ob. q.
Item pur ij alnes de lynge toille pur lynure de meisme le doublet, pris l'alne xjd.,		xxij <i>d.</i>
Item pur j remenaunt de tartaryn verd pur enbroudure d'une doublet blanc,		xij <i>d.</i>
Item pur j alne de lynge toille custange pur lyner del dit tartaryn,		vij <i>d.</i>
Item pur x doussein de poyntes, pris le doussein iij <i>d.</i> ,	ijs.	vjd.
Item pur ij brusshes achetez,		vij <i>d.</i>
Item pur j baselard garnise oue loketez et chape de argent susorretz, achete pur Mounsieur,	xvijs.	
Item pur ix alnes de lynge drap de reynes, dount vj verges pur lyntheaux pur la teste et v verges et j qr. in iiij coverchiefs pur Mounsieur, pris l'alne iijs. iiij <i>d.</i> ,	xxxxs.	
Item pur le facion des dits lyntheaux et coverchiefs oue blank soye,		xd.
Item pur v verges de kersy noir achetez pur chaux affaire pur Mounsieur, a ijs. la verge,	xs.	
Item pur j caas achete pro pectinibus domini,	iijs.	viij <i>d.</i>
Item pur j paire de scissoures pur le dit caas,		xij <i>d.</i>
Item pur j mirour achetes pur le dit caas,		vd.
Item pur ij doussein de poyntes,		xij <i>d.</i>
Item pur tartaryn noir pur l'amendement des chaux Mounsieur,		vjd.

514 A WARDROBE ACCOUNT OF 16-17 RICHARD II, 1393-4

Item pur iiij verges de drap sanguin pur j longe goune a Mounsieur achetez, pris la verge xs. vjd.,		xlijs.	
	viiij ^{li} . viijs. ix ^d . q. [sic]		
Item in xij cordulis pro arcubus domini emptis,			vjd.
In j pari cirothecarum empto pro domino,			ijd.
In xij petulionibus emptis pro domino,		ijs.	
<i>Penston.</i>			
Item in j manubrio de murret empto pro j baselard domini,		iijs.	viiij ^d .
Item pur j gayne pur le dit baselard achete,			xiiij ^d .
Item pur le fourber de la lunnels del dit baselard,			iiij ^d .
Item pur j peel de cheverell noir achete pur lament d'une doublet Mounsieur,			iiij ^d .
Item pur j alne de Westfall achete pur lanegler des chyvax pur les joustes,			vjd.
In v virgis de kersy nigri emptis pro caligis domini, pricium virge ijs.,		xs.	
In emendacione manubrii baselardi domini,			iiij ^d .
Item in j baselard garnis cum argento empto pro domino et postea dato Edwardo Standissh,		xijs.	
	xxxxs. xjd.		
Totalis garderobe cxxviiij ^{li} . xiijs. ijd. ob. q.			

XXIII.—*A Palaeolithic Industry at Northfleet, Kent.*
By REGINALD A. SMITH, Esq., F.S.A.

Read 4th May, 1911.

THE general recognition of man's existence in this country during the deposition of the terrace-gravels of our southern rivers may be said to date from a paper¹ read to this Society by Sir John Evans in 1859; and it was in the same year that McEnery's papers relating to his labours in Kent's Cavern were published, demonstrating the former presence of palaeolithic cave-man on this side of the Channel. The transition from river-drift to cave-deposits, on the other hand, has only recently been illustrated by a close study of the brick-earth deposit on High Lodge Hill near Mildenhall, Suffolk; and the present paper is intended to amplify the evidence for a Moustier period in England, and to bring our deposits of that horizon into still closer relation with the French. If a relative date is incidentally provided for a deposit that has long been somewhat of a mystery to geologists, and if in their turn geologists are moved to do something more for archaeology, the advantage will be considerable. The success that has recently attended what may be called 'intensive geology' in connexion with pleistocene man will no doubt find an echo in this country, and our wealth of material has certainly been used with greater advantage in the last few years. The boulder-clays, which are denied to France, should enable workers in this field to straighten out the connexion of man with the glacial period.

During the last four years there has been a continual harvest for the collector in a superficial deposit at Northfleet, nearly a mile south of the Thames near Gravesend; and without exaggeration it may be said that several thousand flints showing human handiwork have found their way from this site into various private cabinets. Those on exhibition were selected to illustrate certain points from a large number in the possession of the company working the pit, through the kind offices of their local manager, Mr. George Butchard, whose courtesy and hospitality have made the investigation of the find a most pleasant experience.

The site is south of Northfleet railway-station, about half a mile due east of Swanscombe and a mile south-east of Galley Hill, these two names being familiar to all students of the Stone Age in Britain. The pit known to some collectors

¹ *Archaeologia*, xxxviii. 280.

as Baker's Hole is called officially the Southfleet pit of the Associated Portland Cement Manufacturers (1910), Ltd., and lies south of a diminutive tributary of the Thames called the Ebbsfleet, Southfleet station being situated one and a half miles due south of that already mentioned, which is on the line between Dartford and Gravesend. The north-west angle of the pit (which is now removed) produced the remains to be described in the present paper; and at this point, which is a little east of the bench-mark 47. 74, the surface was about 45 feet above Ordnance datum. The implements occurred between 4 and 14 feet below the turf in a deposit capping the chalk, the deposit being visible at the north end of the pit, and varying considerably in thickness. The main axis of this excavation for chalk to be used in the manufacture of cement is over 1,000 yards long, and runs north and south, the slope of the surface at the north-west angle having been about 1 in 40.

At Swanscombe thousands of palaeolithic implements have been found in the terrace-gravels at the 90-foot level (the upper terrace of the Thames), and in the Swanscombe marshes west of Northfleet the formation is 40 feet of clay overlying 18 to 20 feet of gravel, which rests on the chalk. These details are mentioned in order to emphasize the distinction between the terrace-gravels of the immediate neighbourhood and the deposit which was best seen in the north-west angle of the Southfleet pit; and here I am allowed to quote the report drawn up by Mr. Clement Reid, F.R.S., who is now in charge of the lower Thames valley for the Geological Survey. As a quotation his remarks are given in smaller type, but, like Mr. Newton's description of the fauna, form an integral part of the paper. Without such assistance from specialists no speculations as to the significance of the flints would inspire confidence; and the gratuitous services so generously rendered to prehistoric archaeology by both these gentlemen, with whom the present writer has visited the sites, cannot easily be over-estimated.

A long, gently sloping spur of chalk leads upwards from near the water-level to a hill of London Clay, and on part of this slope occurs the deposit now to be described. Though a certain amount of deepening has taken place in the small valleys on either side of this spur, the contours here cannot be greatly different from those which existed when the deposit was formed. One very noticeable feature of this spur is that all superficial indications of any transverse river-terraces have here been swept away or smoothed over, their contents probably being mingled in the indiscriminate mass of débris which now clothes the slope.

Over part of this spur chalk is found immediately beneath the soil; but much of the area is covered by a sheet, 5 or 10 feet thick, of chalk and flint débris containing occasional seams of tertiary material washed from the hill above. This chalk débris is not stratified, but is streaky and contorted; the chalk in it is partly in lumps and grains, partly in the form of a marly paste. Throughout this mass large flints are scattered

promiscuously, and as often with their longer axes vertical as horizontal. The flints are often broken, but not water-worn, except for the eocene pebbles and some weathered flints obviously washed out of earlier pleistocene deposits. The broken surfaces of the flints are bright and black, and the edges are quite sharp, though sometimes slightly battered. Great part of the large implements which are mingled with them are in the same unweathered and unworn state, though others are patinated, evidently before they were deposited in this marly paste. The associated fossils are weathered teeth of mammoth, horse, and more rarely rhinoceros, mixed with fragments of large bones; but these teeth look like surface specimens imbedded after they had long been exposed to the weather. The species found, and their condition, are the same as in the Coombe-rock of Sussex.

It is clear that the absence of fluviatile fossils is not due to decay since the deposit was formed, for derivative eocene shells are quite well preserved, as are the derivative chalk-fossils. The deposit is not an ordinary alluvial or river deposit; it is identical in its peculiar characteristics, and probably in its mode of origin, with the Coombe-rock of Sussex.

On a sloping surface of pervious chalk no deposits are laid down under present climatic conditions; but if the climate is cold enough to allow of deep freezing of the soil, any rain falling before this soil has thoroughly thawed will flow in torrents over the surface, sweeping away the frost-shattered material from the steeper slopes and spreading it out where the slope becomes gentler. The mingled mass of slush, mud, and stones will often be so thick as to flow in a sort of mud stream; hence, I think, originates the streaky and contorted structure, and the flat flints standing upright. That the mass probably flowed only once and then stopped seems to be proved by the included chalk-fragments, for these, if exposed to a second frost and flow (after once thawing), would probably break up into a paste, and would not now be found in recognizable lumps of considerable size.

Possibly the whole deposit we now see at this spot is the result of a single exceptional thaw and flood. It may have taken place while man was still making implements on the slope just above, but it takes a long period for any distinct patina to form on a broken flint-surface, and these Northfleet implements may have lain in the soil several thousand years before they were swept down. Till we have found human bones or similar evidence it will be impossible to make sure that man and the sub-arctic conditions were here exactly contemporaneous.

The deposit, as far as I could judge during a short visit, seems to be of very late pleistocene date, and probably considerably later than any of the ordinary terrace deposits.

A brief description of the Coombe-rock may be given in the words of Dr. Mantell,¹ whose publication has not been entirely superseded:

The immense accumulation of water-worn materials on which Brighton is situated . . . is washed on the south by the sea and forms a line of cliffs 70-80 feet high, which

¹ *The Fossils of the South Downs; or Illustrations of the Geology of Sussex* (1822), 277.

exhibit a vertical section of the strata and enable us to ascertain their nature and position. The lowermost bed is—

- (1) the upper or flinty chalk ;
- (2) bed of fine sand, 3–4 feet thick ;
- (3) shingle bed, 5–8 feet thick ;
- (4) calcareous bed formed of the ruin of the chalk strata, with an intermixture of clay 50–60 feet thick ; it is provincially termed Coombe-rock.

The shingle bed consists of pebbles formed (like the present beach) of broken chalk flints rounded by attrition ; and the upper part of this bed is cemented together by calcareous spar of a light yellow or amber colour, forming a kind of breccia of a very singular appearance.

The calcareous bed is composed of broken chalk, with angular fragments of flint imbedded in a calcareous mass of a yellowish colour, constituting a very hard and coarse conglomerate. It is not stratified, but is merely a confused heap of alluvial materials. It varies considerably in its appearance and composition in different parts of its course. In the inferior portion of the mass the chalk is reduced to the state of small grains, which gradually become larger in proportion to their height in the cliff ; at length fragments of flint appear, and these increase in size and number as they approach the upper part of the bed, of which they constitute the most considerable portion. These flints are more or less broken, and resemble those of our ploughed lands that have been long exposed to the action of the atmosphere.

In some parts of the cliff irregular masses occur of an extraordinary hardness ; these have been produced by an infiltration of crystallized carbonate of lime. . . . This bed also contains water-worn blocks of Druid sandstone (greywethers) and ferruginous breccia, corresponding in every respect with those in the plastic clay formation (Woolwich and Reading beds). Small nodular masses, composed of carbonate of iron in lenticular crystals, interspersed with brown calcareous spar, have occasionally been found at the depth of 10–12 feet from the summit of the cliff. The only organic remains discovered in this deposit are the bones and teeth of the horse and of the Asiatic elephant ; these occur but seldom and are more or less water-worn.

As long ago as 1876 our late Fellow Mr. Ernest Willett impressed on the workmen in the Coombe-rock pit near Portslade station (three miles west of Brighton) the importance of preserving any fragments of bone or stones of unusual form, and he was fortunate in securing a good palaeolithic implement of St. Acheul appearance, 5.3 in. by 2.6 in., which he wisely and generously presented to the Brighton Museum. The edges are slightly rolled, and the implement no doubt travelled some distance with the deposit, in which it was found at a depth of 15 feet from the present surface. It is stated that such specimens are extremely rare,¹ and Mr. Toms, who is in charge of the antiquities at Brighton, knows of no other from this deposit in the neighbourhood of Brighton,

¹ Fred. Dixon, *Geology of Sussex*, 2nd ed., 112.

though many are found on the surface of the Downs on or near patches of clay-with-flints.

Mr. Clement Reid has made a special study of the Coombe-rock for the Geological Survey, and propounded the following theory in 1887¹:

After the formation of the ancient sea-cliff at Brighton an enormous mass of angular flints and chalk detritus was swept from the Downs, and spread far and wide in a continuous sheet over the lowlands. In the coombes, and for three or four miles south of the Downs, it consists of a mass of unstratified or obscurely stratified flints, battered but not rolled, and imbedded in a matrix of chalk paste and pieces of chalk. Close to the old cliff, as at Brighton, large masses of chalk are found in it and also locally enormous greywethers. Fossils of the Coombe-rock consist almost entirely of teeth of horse and elephant, broken and apparently also decayed before they were imbedded. The enormous sheet of Coombe-rock has evidently been derived from the Downs. The Head at Bovey Tracey, a deposit very like Coombe-rock, is associated with the Arctic birch, bearberry, and some northern willows. The mean temperature in the south of England was very considerably below freezing-point, consequently all rocks not protected by snow would be permanently frozen to such a depth as to modify entirely the drainage-system of the country. Any rain falling in the summer would be unable to penetrate more than a few inches, and would run off the steep slopes of the Downs and form violent and transitory mountain-torrents, tearing up a layer of rubble previously loosened by the frost. This was the origin of the steep-sided coombes and of the Coombe-rock. It was probably a period of drought, perhaps equivalent to the Loess period in central Europe.

The position of the Coombe-rock at Brighton above a raised beach in itself furnishes a relative date that may some day be more accurately determined, and it is not too much to expect that some relation between the raised beaches and the river-terraces will presently be established for this country. In any case it is clear that the cold was intense, at least in winter, at the time the Coombe-rock was laid down, and that the land was lower in relation to the sea than at the present day, a circumstance that would tend to raise the temperature. It must be confessed that the implements and bones were mainly excavated by the workmen, but enough is preserved to indicate with some precision the horizon of this deposit. The following report by Mr. E. T. Newton, F.R.S., deals with the animal remains in the possession of the Company:

The mammalian bones obtained by Mr. Geo. Butchard from 'Baker's Hole' at Northfleet, associated with peculiar flint implements, have been submitted to me for identification. They number about 150; but unfortunately the greater number are too fragmentary to give a clue to their generic affinities. It has been possible, however, to identify some sixty of them with more or less certainty, and these are referable to

¹ *Quart. Journ. Geol. Soc.*, xliii. 364.

four distinct forms, namely *Elephas primigenius*, *Rhinoceros leptorhinus*, *Equus caballus*, and *Cervus elaphus*.

Elephas primigenius (Mammoth) is represented by portions of two large grinders and a fragment of another. One of these is a very characteristic tooth, and leaves no room for doubt as to its having belonged to *E. primigenius*. Portions of limb-bones, feet, vertebrae, &c., to the number of twenty-four, also belong to Elephant and in all probability to *E. primigenius*, but their specific identification is uncertain.

Rhinoceros leptorhinus. Half a dozen parts of large limb-bones undoubtedly belong to *Rhinoceros*, and a portion of a lower grinder must be referred to *Rhinoceros leptorhinus*. The tooth thus supplies satisfactory evidence for the presence of the species; and there is little doubt but that the limb-bones belong to the same form.

Equus caballus (Horse). Eight lower grinders, a metatarsal bone, and a radius evidently belonged to a large form of horse. And a fragment of a small metapodial bone clearly represents a very much smaller animal.

Cervus elaphus (Red-deer). The basal portions of two large antlers and a dozen pieces of tines belong undoubtedly to the Red-deer.

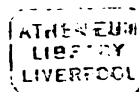
The small number of species represented by this series of osseous remains prevents any very definite conclusions being drawn as to the precise horizon of the deposit in which they were found; but the presence of *Elephas primigenius* and *Rhinoceros leptorhinus* would seem to indicate a similar age to that of the brick-earths of Ilford and Grays.

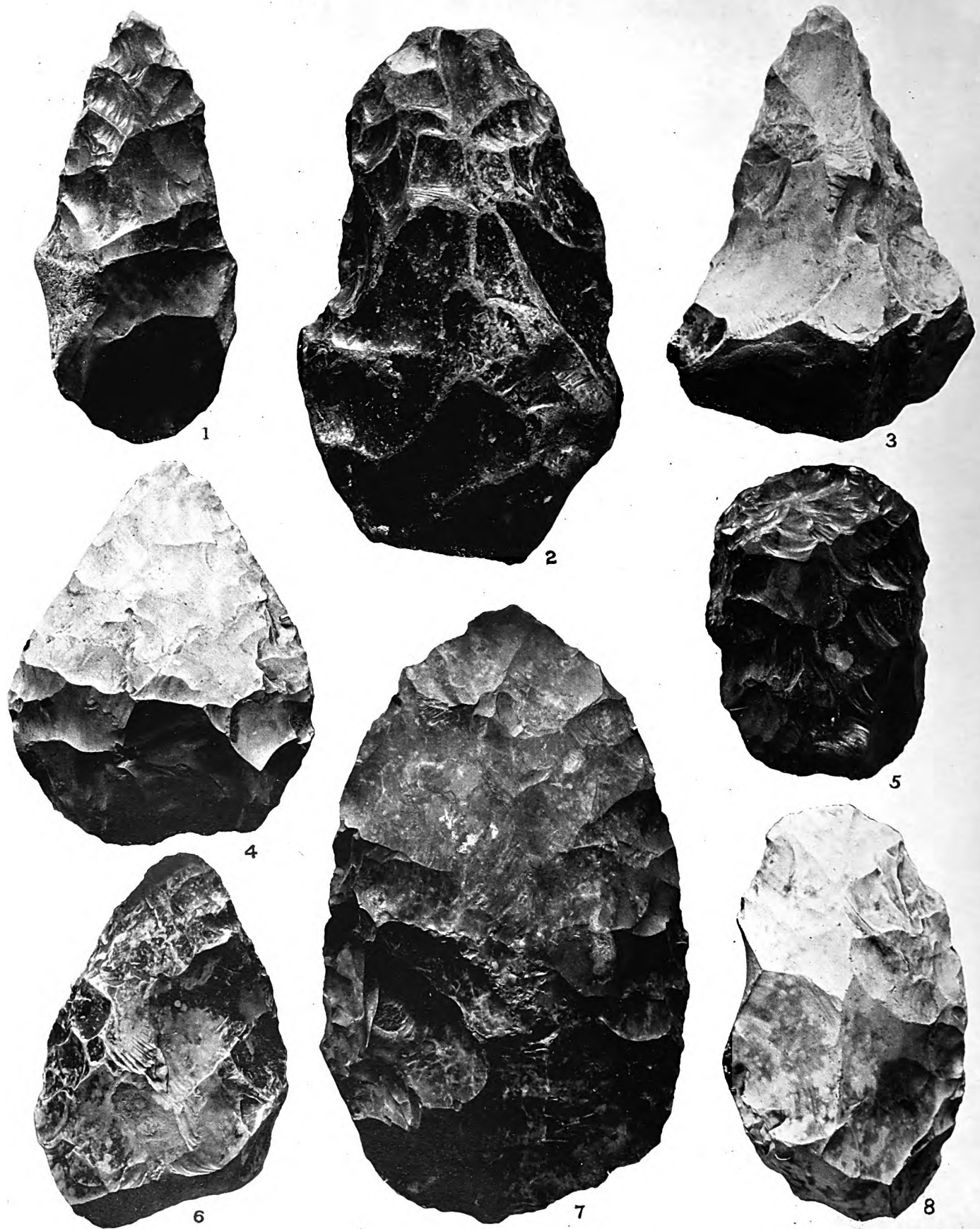
The above list contains nothing inconsistent with the fauna during the period of Le Moustier, except perhaps one item. The fragmentary tooth identified as belonging to leptorhine rhinoceros had evidently met with rough usage before being buried on this site, and it is a characteristic of the Coombe-rock fauna that teeth and large bones alone remain, showing signs of exposure and rough treatment. The species of rhinoceros that is uniformly found in association with the mammoth is the tichorhine,¹ with a woolly covering against the cold; while the earlier leptorhine belonged to a warmer climate, and is generally associated with the straight-tusked elephant (*antiquus*) and the hippopotamus. It is conceivable that this solitary tooth was already an antiquity when it was swept up into the Coombe-rock. Possibly it belonged to the upper terrace-gravel, and should rank with the derived palaeoliths; but in any case it is not sufficient evidence that the leptorhine rhinoceros was here contemporary with the mammoth, of which plentiful remains have been found in the Coombe-rock.

What may be termed the natural history of the site has now been disposed of, and it remains to notice the works of man so abundant in this quaternary deposit. Any type-series selected from the finds must convey but an imperfect idea of this human industry, and an examination of the bulk is necessary to bring

¹ Teeth of this species were found by Mantell in the Coombe-rock at Brighton (*Quart. Journ. Geol. Soc.*, vii. 366).

s
b
c
d
y
d
g
m





DERIVED PALAEOLITHIC IMPLEMENTS, NORTHFLEET PIT
Nearly $\frac{3}{4}$ linear

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out the true significance of the discovery. The whole may be divided into two very unequal classes, the distinction between them being so obvious that no minute details need be given at this stage of the inquiry. At least 99 per cent. exhibit a strong family likeness, and must be taken as typical of the site. This group consists of flakes and cores, unrolled and in most cases unpatinated, indicating an extensive factory on the spot of implements of Le Moustier type, of unusual size, and flaked mainly on one face.

The exceptional specimens, about 1 per cent. of the total, are implements of greater antiquity derived from the upper terrace-gravels, worked on both faces, mostly rolled and patinated, evidently the sweepings of the neighbouring surface, and carried down over a workshop-floor along with other constituents of the Coombe-rock. This group contains recognized types of the Chelles and St. Acheul periods, nearly all of different varieties of flint, and showing a wide range of patination and surface condition. It is fair, therefore, to assume that they have had different histories, and their forms are sufficient evidence of their relative dates. They should belong to the older terrace-gravel of the Thames; and if the Coombe-rock theory is correct it is clear that they were washed out of the 90-foot terrace which exists above Baker's Hole by the deluge of mud that now forms the 'uncallow' (unutilized material) of the pit.

On the accompanying plate LXXII a few specimens are reproduced to point the contrast they present to each other and collectively to the débris of the workshop on this site.

- No. 1. Small lanceolate implement of brown flint with creamy patina, with crust on sides of butt, unrolled : Chelles type.
- No. 2. Lustrous implement of black and brown flint, rolled edges, with rough indigo markings : Chelles type.
- No. 3. Subtriangular implement of black flint, with much creamy patina and thick crusted butt, unrolled : St. Acheul I type.
- No. 4. Fine subtriangular implement with edges twisted and running all round except for a flat space beside the butt, grey patina, unrolled : St. Acheul II type.
- No. 5. Ovate implement of black and brown flint with edge all round, unrolled : St. Acheul type.
- No. 6. Amygdaloid implement of black flint with white markings except on the knots, thick crusted butt, unrolled : St. Acheul I type.
- No. 7. Ovate implement (French, *limande*) of pale brown flint with some dendritic marking, a flat space on edge beside the butt, unrolled : St. Acheul I type.
- No. 8. Implement of black flint with dendritic markings on bluish-white face, the other pure white, cutting edge along one side and small patch of crust on opposite thick edge, unrolled : St. Acheul type.

It would have been strange if such a vast aggregation of worked flints as that in Baker's Hole had remained unnoticed till the last four years, and in fact the deposit, or a neighbouring deposit of the same character, was not only broached but described in detail nearly thirty years ago. In 1883 Mr. F. C. J. Spurrell read a paper¹ on 'Palaeolithic Knapping-tools and modes of using them, with special reference to Crayford and Northfleet'. At the latter place he discovered and examined cartloads of flakes lying on a river beach, perhaps dry in summer

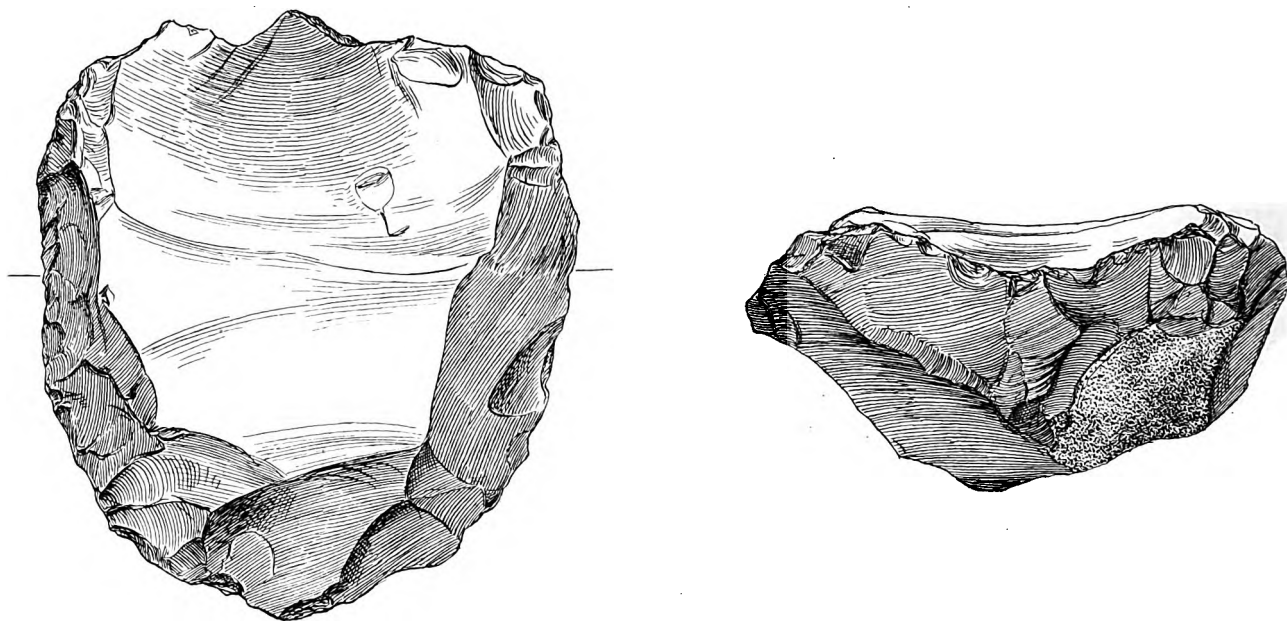


Fig. 1. Tortoise-shaped core, Northfleet: top and end views. $\frac{1}{2}$.

and liable to floods. After the deposit of this refuse from a flint factory some of the ground had been disturbed by ice, but it was clear that the mass was practically *in situ*, and that palaeolithic man lived in the immediate neighbourhood. Among the flints were some that indicated a special mode of manufacture, and Mr. Spurrell's description shows that he had come across specimens like those exhibited on the present occasion.

This mode of manufacture largely depended on sharp-pointed hammers. A flint stone being selected and trimmed coarsely round the sides, the upper face was worked into the form of a flat dome; then from one end the whole of this prepared surface was detached

¹ *Journal of Anthropological Institute*, xiii. 109, pl. iii, fig. 5 (side view of core, 5 in. wide), and figs. 7, 8 (views of perfect implement, 4 in. long). A summary in *Archaeologia Cantiana*, xv. 102. The term 'turtle-back' is used for a certain class of implements in America; W. K. Moorehead, *The Stone Age in North America*, i. 40, 191, 348.

by a single blow, producing, when the operation had been well conducted, a 'turtle-backed' flake, with a flat surface on the other side. It is remarkable how much preparation and labour depended for its ultimate success on adroitness in the delivery of a single blow. The trimming of these 'turtle-backed scrapers' is invariably on the raised face only. They might equally be skinning implements or sleeks (slicks) for dressing skins, and were admirably adapted for the first purpose. . . . Held with their rounded (or bevelled) sides towards the skin, they could only cut downwards, and if they slipped could not perforate or injure it, a matter of extreme importance in those times.

Mr. Spurrell has presented to the Natural History Museum a large oval flake with enormous bulb of percussion, found in the tramway-cutting at Ebbsfleet (adjoining Northfleet), and no doubt belonging to the series under dis-

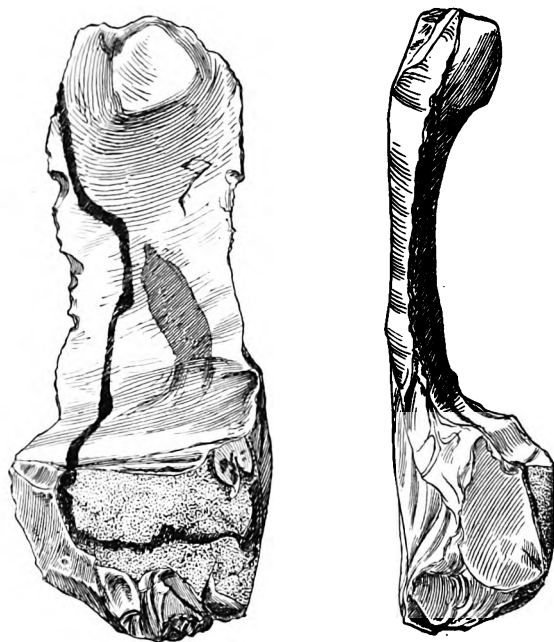


Fig. 2. Flake thickened at the point, Northfleet. $\frac{1}{2}$.

cussion, if the tramway meant is that leading over the stream known as the Ebbsfleet past the Roman villa to the large pit sometimes called Baker's Hole.

Tortoise-shaped cores. This is perhaps the most striking group in the enormous series from Northfleet, and the uniformity of working is sufficient proof that they belong to one industry. Typical specimens measure 6 in. by $5\frac{1}{2}$ in. and 7 in. by 6 in., the greatest thickness being about the middle, and ranging between $2\frac{1}{2}$ in. and 3 in. The two faces are easily distinguishable (fig. 1). One that must be regarded as the lower when in use is more or less

conical, the shape being produced by removing flakes which, starting from the oval edge, approach (but do not generally reach) the apex of the cone, where a patch of crust is frequently allowed to remain. The cone apparently served no useful purpose, and may have been merely the result of trimming the edge into an oval form by alternate flaking. The upper face, on which more care was bestowed, was rendered convex by surface chipping, sometimes longitudinal, most of the blows being delivered, however, at the edge, and resulting sometimes in serviceable flakes. The intention of the flint-worker was evidently to dress the whole upper surface before striking off the flake, the under or bulbar face of the detached flake being quite flat when the final blow that severed it from the core had been successfully delivered. Extant specimens show clearly that this was not always the case; instead of running horizontally the fracture sometimes passed upwards or downwards, the flake then breaking off short (pl. LXXIV, fig. 4), or suddenly becoming thicker at the end away from the bulb by encroaching on the core (fig. 2). The striking surface at the butt-end was prepared generally with a somewhat steeper edge-flaking, which gave rise to a number of facets. On one of these the liberating blow fell, producing a large bulb of percussion on the detached flake,¹ and leaving a corresponding cavity on the upper face of the block. Several examples show that when this one flake was removed, whether successfully or not, the core was laid aside and not further utilized. This fact indicates an enormous stock of raw material, and a strong demand for a particular pattern of tool, flaked on one face only in the style of Le Moustier.

Other trimmed cores. There are also a few oval cores, about 6 by 4 in., and equally convex on the faces, which have not had the flake-implement detached, though this might have been done on either face. The flaking is somewhat rough, one face rather better than the other at times, and it is probable that these nuclei were finally rejected by the flint-worker as not being up to the standard of size or finish. Though about the size and shape of a *limande* (the St. Acheul type named by the French after the dab-fish), these exceptional specimens do not seem to have been intended for implements in this condition, nor to have been used as such, the edges being blunt and conspicuously sinuous all round.

The perfect implement. As might be expected, the number of successes (as pl. LXXIV, fig. 1) is limited, and would not often have remained on the working-floor along with the refuse; but the few preserved from this site not only show

¹ Our Fellow Mr. Garraway Rice exhibited in illustration of this feature several flakes found in front of the Union Workhouse at Ospringe, on the west side of Faversham and about twenty-five miles from Northfleet. They may be contemporary, but the circumstances of the discovery are not known.



1 a



2 a



1 b



2 b



3 a



4 a



3 b



4 b

NORTHFLEET AND LE MOUSTIER IMPLEMENTS COMPARED

Nearly $\frac{1}{2}$ linear

Figs. 1, 3. Le Moustier, Dordogne.

Figs. 2, 4. Northfleet, Kent.

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what the craftsman was aiming at, but also prove that he was closely connected, in culture if not also in blood, with men who at one time occupied the cavern of Le Moustier in the Dordogne. The analogy is strikingly illustrated on pl. LXXIII, where views of a perfect implement from the classical site are given side by side with one of the best specimens from the Northfleet series. Specimens comparable with that chosen for illustration measure $5\frac{1}{2}$ by $3\frac{1}{4}$ in., 5 by 4 in., $5\frac{3}{4}$ by 4 in., $4\frac{1}{4}$ by $3\frac{1}{4}$ in., and 7 by $4\frac{1}{2}$ in.

The large oval implement from Le Moustier cavern (pl. LXXIII, fig. 1 *a, b*) is not the most common type of that period, and may belong to its earliest stage, but cannot be relegated to the preceding (Drift) period of St. Acheul without upsetting the recognized classification, as the implement is flaked on one face only and is not the only example extant. It is, however, of brownish flint, whereas specimens from Le Moustier are generally of dark grey without any alteration of the surface. The bulb alone was trimmed on the flat face (pl. LXXIII, top of fig. 1 *b*), and there are signs of use as a scraper (*racloir*) on the two edges. The upper or convex face has evidently been flaked from the edge before separation from the core, and been subsequently trimmed or flaked by use round the edge. This may be regarded as a successful implement, well formed and used after it left the workshop. It measures 7 in. by 4 in., the photograph being about half-scale.

The Northfleet parallel is typical of the site in some respects and exceptional in others. It happens to be of brown flint, not quite the same quality as that from Le Moustier, and altogether distinct from the bulk of the Northfleet series; but it is a good example of the type that the local flint-worker was trying to produce, at least with respect to its outline and upper or convex face (pl. LXXIII, fig. 2 *a*). The flat face (fig. 2 *b*) is on the other hand abnormal, for it is not a clean fracture, but flaked all over, with part of the pale crust remaining near the butt. This extensive trimming no doubt remedied a defect in the original fracture, for which the quality of the flint was perhaps responsible, but in this respect it cannot be regarded as typical of the factory.

Large flakes of other forms. The skill and good fortune of the flint-worker on this site may be estimated to some extent by the larger flakes evidently struck from tortoise-shaped cores. They may be classified as long, oval, and circular flakes, of which comparatively few show any signs of use, and it is possible that they were abandoned as failures, good implements not being left on the workshop floor. The long flake is generally 5 or 6 in. by 4 in. (pl. LXXIV, figs. 6, 7, 8), and the circular (pl. LXXIV, fig. 4) about 5 in. in diameter, the oval (pl. LXXIV, figs. 1, 2, 5) occupying an intermediate position. Practically all are unused, and may be regarded as unsuccessful attempts at the typical implement, thrown aside by the flint-worker. On pl. LXXIII are shown side by side long flakes from

Northfleet and Le Moustier itself. The latter specimen (pl. LXXIII, fig. 3 *a, b*) is of the usual brownish-grey flint, practically unused, the bulb having been knocked away after the flake was detached from the core. The same may be noticed on the Northfleet specimen (pl. LXXIII, fig. 4 *b*), which shows some dendritic marking, but is quite representative of hundreds of others from the site.

The true palaeolithic disc, like those from Santon Downham in Suffolk and Abbeville in France, is not represented here, and indeed belongs to the earlier period of St. Acheul. The flakes occasionally show slight edge-chipping on one

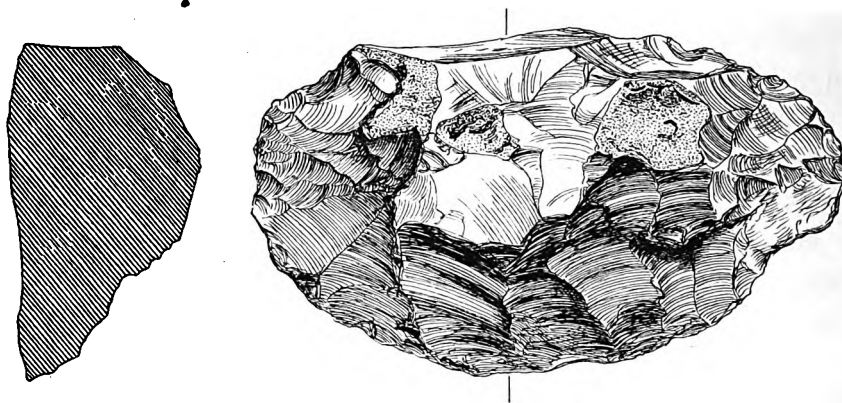


Fig. 3. Side chopper, Northfleet; with section. $\frac{1}{2}$

or both faces, due in the latter case perhaps to use as a saw, but in neither to true secondary chipping, that is, trimming subsequent to removal from the core in order to get a symmetrical outline or smooth face. Careful finishing of this kind does occur on some of the successful flakes, particularly on a black specimen (pl. LXXIV, fig. 3), but this is easily distinguishable from the group under discussion.

Chopping tools. Exceptional at Northfleet, but plentiful in the cavern of Le Moustier are heavy tools (fig. 3), with convex cutting-edge along one side, the opposite edge left intact with the crust on it, or flaked and battered so as to present no sharp edges to the hand. These were evidently held by the back, and used for chopping, similar tools being found occasionally in the Drift.¹

A flint may be 'worked' either into or out of shape, and there is generally an ambiguity in the phrase; but 'trimming' may be used for deliberate chipping into shape, and 'use' for accidental flaking caused by sawing, scraping, planing,

¹ Worthington G. Smith, *Man, the Primeval Savage*, p. 122; *Stone Age Guide* (British Museum), 2nd ed., p. 27.

cutting, &c., with the ready-made tool. A small proportion from Northfleet show something more than signs of use on the bulbar face, and surface-flaking was evidently resorted to in order to minimize an excessive bulb of percussion or to rectify inequalities at the other end of the flake. Such exceptional trimming is seen on a few smaller (and presumably later) palaeolithic flints from this country, as Kent's Cavern, Devon; Creswell Crags, Derbyshire; and Ffynnon Beuno Cave, St. Asaph,¹ these perhaps heralding the lozenge blades of the Solutré period, which are flaked all over both faces.

The original flint, which was evidently mined in the immediate vicinity, though the source cannot now be identified with certainty, was black and slightly translucent, but most pieces have changed to grey. This transformation does not in all cases imply a long period of exposure on the surface, for the inferior flint now mined at Brandon for the manufacture of gun-flints weathers to a dull grey in a few hours, acquiring a false patina.² The other changes illustrated in the Northfleet series, from grey through a series of gradations to buff, must have been produced over a very long period, but, to judge from analogy, before the burial of the flints in this deposit, for exposure to the weather seems to be a necessary factor in natural patination. The whole question is still under discussion, but the series seems fairly complete at Northfleet, and the conclusions arrived at are confirmed by specimens of double patination. From grey the change is to bluish-white, often mottled, the bluish tinge being due to the original black body of the flint showing through a white film on the surface. Further exposure seems to have thickened this film, eliminating the blue (sometimes on one face only) and producing a uniform white, which in its turn becomes creamy, and eventually, but only in a few cases, a pale buff colour by slight staining. The yellowish brown seen on a specimen here and there was no doubt due to iron-staining of a creamy or buff surface. The decay of iron pyrites in the chalky matrix would be a sufficient explanation of this coloration.

The black flint used on this working-floor often had grey 'knots', which seem to be denser than the surrounding flint, and less susceptible to patinating influences; but there is enough uniformity in the material to enable us to distinguish this quality from that procured from Swanscombe, and exploited largely in the earlier palaeolithic period. Hundreds of implements from the terrace-gravels here are marbled brown, yellow, and black, but brown all through, whereas the Northfleet material is black within.

A parallel for many points in the above description of the Northfleet industry may be found in Prof. Commont's account of discoveries in the North of

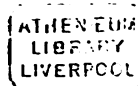
¹ *Quart. Journ. Geol. Soc.*, xlii. 9, fig. 6 (Natural History Museum).

² According to Dr. Allen Sturge, who also informs me that the supply of first-class flint at Brandon is now exhausted.

France.¹ Besides the classical sites of St. Acheul, Montières, and Abbeville, no less than twenty-three 'stations' north and south of the Somme have yielded relics of the Moustier period, and enabled the Professor to distinguish even flakes of this horizon from others of earlier or later date. Most of the above French sites rarely produce the so-called Moustier point (as recently found in Jersey, see above, p. 457); but the Levallois flake (named after the Levallois-Perret quarter of Paris, where the type is well represented) is abundantly found, and offers a striking resemblance to the Northfleet series. It was the dominant type at this stage of the palaeolithic period (that is, the beginning of late pleistocene times), and by no means confined to the Dordogne, where the cave of Le Moustier is situated. It has frequently been found both on the plateau and in the valley, but has been overlooked by the collector in the past. Both on the earlier working-floor at St. Acheul and on sites of the Moustier period Prof. Commont has found large flakes that fitted into their original cores, and the method of flaking in either case can thus be described in detail.

In the St. Acheul period the flint core was flaked with no particular system, the resulting flakes being short, thick, and irregular. After the crust was removed, the blow was delivered on an almost flat surface, produced by the previous removal of a flake. The striking-point is seen as a semicircular projection at the base of the detached flake, and the bulb of percussion is small, only spreading over a small portion of the under-face of the flake. The craftsmen of the Moustier period had another method, and their large flakes, instead of being square at the base, are polygonal. The bulb is enormous, of extreme convexity and area, covering an appreciable portion of the under face of the flake. Whereas in the earlier period the blow was oblique on an extensive 'platform' or striking-plane and, meeting with greater resistance on the part of the flint, produced a small bulb, the later craftsman aimed a blow at right angles to one of the facets at the end of the core. In this case the platform was extremely small and the lateral resistance to the blow in flaking was therefore negligible, hence the thickness and great extent of the bulb of percussion. The facets of the core constitute another distinctive feature of such flakes as those from Northfleet, and the process is fairly obvious from the specimens exhibited. The workman first removed the projections from a large block of the raw material, no doubt fresh from a neighbouring bed, and then trimmed the core into a polygonal form. By blows right and left of a line more or less straight all round the block, one face was rendered convex and the other often conical. It was from the upper or flatter face that a large flake already trimmed was to be detached, while the

¹ *L'industrie Moustérienne dans la région du Nord de la France* (5^{me} Congrès préhistorique de France, Session de Beauvais (1909), 115).



pointed base seems to have been the unintentional result of the trimming process and served no useful purpose, while it has perplexed many collectors in recent years.

The method of dressing the upper face before detaching the flake from its core is not confined to the Moustier period, but was common in the neolithic workshops of Le Grand-Pressigny (Indre-et-Loire), as hundreds of *livres de beurre* (elongated cores the colour of old beeswax) remain to testify. Except that the Pressigny flint was chiefly used in the manufacture of long blades instead of oval flakes, the two industries are practically identical, both faces being trimmed from the periphery, but only the flatter being utilized.

In Prof. Commont's experience the implement has often been spoilt and the core rendered useless by faults in the flint. A 'knot' or particularly hard spot in the stone has diverted the fracture towards one or the other face, and either produced a stumpy flake (as pl. LXXIV, fig. 4) or a long one with a large lump attached to the bulbar face near the point (as fig. 2). He also notes many instances of cores that show where a flake has been detached more or less successfully; and has collected a certain number of cores from which elongated flakes have been struck, an evident anticipation of the blades that characterize the last division of the Cave period (La Madeleine).

This method of overcoming the resistance of the flint may have been discovered accidentally, but once learnt was not forgotten; and, though the Moustier industry is generally regarded as a falling-off from the high standard of St. Acheul, it seems that Le Moustier man succeeded in getting all the advantages of the earlier tool with much less trouble than his predecessor, and gave up the more laborious process of flaking both faces. The change was gradual, and hence the frequent appearance of the hand-axe (*coup de poing*) in early Moustier deposits. The smaller flakes, worn by use into the so-called 'Moustier point', were often derived from the sides of the core and resembled the simple flake of all periods, in form if not in patina; whereas the larger Levallois flakes were formed in the peculiar manner already described, and sometimes measured six or seven inches long and one to two inches in thickness at the butt. These belong to the lower Moustier levels of the typical site of Montières, and to the base of the *ergeron* (upper loess) at St. Acheul itself, associated with hand-axes.

The large flake, when detached from the core, was trimmed by secondary chipping along one or both of the long sides, and became a side-scraper or double-scraper accordingly. Other forms of smaller flakes are saws (chipped by usage along the edge on both faces), knives, end-scrapers or planes, graving-tools, lance-heads, hollow-scrapers, and blades, but the succession of these minor and rarer types has still to be decided. The accompanying fauna is not well

preserved, as the beds are largely decalcified; but the mammoth, woolly rhinoceros, bison, horse, reindeer, hyaena, wolf, fox, pouched marmot, polecat, weasel, water-vole, and marmot have been determined, some at least of the species indicating a climate like that of Siberia at the present day.

The above is a somewhat long summary of a paper that does much to determine the distribution and evolution of Moustier types in the north of France, just as Prof. Commont's researches at St. Acheul have cleared up many problems connected with the earlier stages of the palaeolithic period. At the risk of repetition, his results have been given in some detail just to show the entire agreement between Le Moustier deposits on either side of the Channel, if such a phrase is permissible with reference to a time when the Straits of Dover did not exist. In Belgium the period seems to have left no traces, and the reason assigned by Dr. Rutot is that the country was then under water, which laid down loess (*loess fluvial*, or *limon Hesbayan*), due to the melting ice of the second quaternary or Riss glaciation. His view that the population was driven south out of Belgium, South England, and the Paris basin by this deposit may, however, be modified in view of the English deposits at High Lodge (Mildenhall) and Northfleet, besides the extensive series in the neighbourhood of the Somme, recently published by Prof. Commont.

There are indeed one or two fine implements in the present series (as pl. LXXII, fig. 4) of the type St. Acheul II; but in spite of the fact that we are dealing mainly with the débris of a working-floor, these implements are a negligible quantity in view of the vast numbers of flints manufactured in another style. Implements worked on both faces, of the typical Northfleet flint and without wear or patina, seem to be only casual survivals from an earlier industry or civilization. This admixture of earlier forms occurs on other sites; but if the term St. Acheul II is not to be abused, Prof. Commont's classification must be accepted. On the other side, Dr. Obermaier would so far agree with Dr. Rutot that Levallois flakes belong to the end of the Drift rather than to the beginning of the Cave period; and states that they first appear towards the end of the period St. Acheul I, culminating in the second stage of that period. The type, he continues, is represented on all St. Acheul sites in company with fine hand-axes of lance-head form as well as numerous typical Moustier forms. The Levallois flake is a long and broad blade of regular outline and thin section. One face is flat, frequently with the bulb of percussion. Pointed and oval forms occur and are normally trimmed for use in chopping, cutting, scraping, planing, and boring. The split hand-axe (*Halbfaustkeil*), considered by de Mortillet and others as a transition from the hand-axe to the Levallois flake, is rare, as for instance at St. Acheul; and the Levallois type is more likely a descendant of the large flakes that appeared in the early Chelles

period and developed independently of the hand-axe. He agrees, however, with Prof. Commont that this type rendered the hand-axe of St. Acheul II superfluous, and eventually superseded it; the Levallois flake was more easily produced, and yet served all the purposes of the developed hand-axe.¹

There is also independent geological evidence in this country for the succession adopted in this paper. For the last ten years implements of St. Acheul types have been found in large quantities at Knowle Farm Quarry, Savernake Forest;² and the gravel there (not a true terrace-gravel, but 450 feet above the sea) has been equated with the well-known deposits of Southampton Water, Bournemouth, and the Avon Valley. All these are more ancient than such deposits as the Coombe-rock of Brighton or the lowest terrace-gravels in the valleys of southern England.³ Mr. Pocock states that on top of the chalk at Grays (on the north bank of the lower Thames) there is a bed of flints and chalk fragments a few feet thick which shows signs of disturbance by pressure. Mr. H. B. Woodward, who examined the deposit, thought that, while it bears some resemblance to the Coombe-rock of Sussex, which Mr. Clement Reid regards as indicating a recurrence of arctic conditions after an interglacial episode, yet the bed might possibly be due to glaciation of the surface at the time when the chalky boulder-clay was formed. Its age is uncertain, but its position suggests that it is later than the denudation of the high terrace-gravel. It is not improbably contemporaneous with the low terrace-gravel and with the Coombe-rock.⁴

In conclusion, it may be pointed out that there is a similar deposit on the other side of the Channel, at Sangatte near Calais, which has yielded flint implements of Le Moustier types.⁵ Years ago Sir Joseph Prestwich remarked that in general structure, colour, materials, and order of superposition the cliffs at Sangatte and Brighton so closely resemble one another that a section of the one might almost pass for that of the other.⁶ Whether the Straits of Dover then existed or not, the conditions seem to have been uniform in the neighbourhood, at least at Northfleet, Brighton, and Sangatte, and there is ample justification, therefore, for an attempt to correlate the English and French deposits. Blades measuring 5 in. by 2 to 3½ in., without patina or lustre and with sharp edges, have been found in quantity at Compiègne, Oise,⁷ nearly all 'rechipped at

¹ Obermaier, *Die Steingeräte des französischen Altpaläolithikums* (Vienna, 1908), 74, figs. 117, 118, 122, 123 (separate impression, from *Mitt. der prähist. Kommission der Kais. Akad. der Wissenschaften*, vol. ii).

² *Proceedings*, xxii. 453.

³ *Summary of Progress in 1902* (Geological Survey), 208.

⁴ *Summary of Progress in 1902* (Geological Survey), 206.

⁵ De Mortillet, *Le Préhistorique*, 3rd ed. (1900), 599.

⁶ *Quart. Journ. Geol. Soc.*, vii. 274; section of Brighton cliff, fig. 7, p. 365.

⁷ *L'Homme préhistorique*, 1904, 118.

the butt' (apparently faceted before being detached). An important workshop of Le Moustier date, occupying several hectares, was also excavated at Busigny (Nord), and with an abundance of typical tools and flakes occurred a few small and fine hand-axes (*coups de poing*),¹ in close agreement with the Northfleet find. Here the flakes are sometimes patinated, no doubt through long exposure on the surface,² but their condition shows they were practically unmoved from the place where they were made. This fact, and the absence of any types indicating a later stage of the Cave period, render it most probable that the Northfleet site was overwhelmed by the Coombe-rock before the apogee of the Moustier period; and the presence of well-patinated implements³ of the same type as the unpatinated majority is some indication of the enormous length of this single phase of the Quaternary period.

¹ *Le Préhistorique*, 599. Hand-axes of St. Acheul type have even occurred at Le Moustier (*L'Homme préhistorique*, 1904, 198, fig. 92, nos. 1, 2).

² Some have evidently lain on one face more than the other, the deeper patination of the upper face just encroaching on the edge of the under face, where it was unprotected by contact with the ground.

³ That flints in the Coombe-rock had been long exposed to the atmosphere is noticed in *Quart. Journ. Geol. Soc.*, vii. 126; other formations, apparently contemporary, are also given in a table opposite p. 136.

XXIV.—*The Discovery of the Remains of King Henry VI in St. George's Chapel, Windsor Castle.* By W. H. ST. JOHN HOPE, Esq., M.A.

Read 11 May, 1911.

IN the year 1790 the Bishop of Carlisle, Dr. John Douglas, who was also Dean of Windsor, communicated to the Society of Antiquaries an account of 'the Vault, Body, and Monument, of Edward IV. in St. George's Chapel at Windsor'. This forms one of the memoirs printed in the third volume of *Vetusta Monumenta*, and describes certain discoveries made on 13th March, 1789, 'in making the ground to receive the new pavement' in the north aisle of the quire.

Towards the end of the Bishop's paper, which does not itself otherwise concern us now, reference is made to another vault near that of King Edward IV, in which it is supposed his daughter Margaret and his third son George Duke of Bedford lie.

'This vault,' the Bishop states, 'escaped the examination of the paviours, as did also that of Henry VI. When, in the progress of their work, they had reached the arch in the south aisle, under which King Henry was buried, in digging ground for the new pavement, they found the entrance into the vault, but were directed not to open it.'

Further on the Bishop's account adds: 'The south door of the choir opening within the compass of the arch, under which Henry VI. lies interred, no memorial of him could be fixed up directly over his vault; but by his Majesty's order a marble grave-stone has been laid down upon the pavement in the adjoining part of the south aisle, with his name inscribed, HENRY VI. and the royal arms.'

The second bay of the south aisle of the quire, which is the part of the chapel here referred to, has always been associated by tradition with the name of King Henry VI; and the whole of it was formerly decorated in his honour with colour and gilding, traces of which may still be seen; while the key of the vault, which dates from the reign of King Henry VII, bears a sculptured representation of the King's arms and supporters.

The arch forming the north side of the bay is now filled with a wooden screen and pair of gates, but before the quire stalls were extended eastward in 1788 the gates were in the third bay, and the King's arch contained a screen only.

In a plan of St. George's Chapel published by Hollar in 1674 the site of King Henry's grave is indicated by an enclosure of some kind within the second arch, between the quire and the aisle, entitled 'Sepulchrum Regis Henr: 6'; a much later plan, made in 1805 by Mr. Emlyn, who was in charge of the repaving works of 1789, and published by Nash, also refers to the same place, but as 'Henry the VI. Vault'.

The repaving has obliterated any traces of the King's tomb and altar mentioned in the will of King Henry VIII, and the marble slab laid down to the

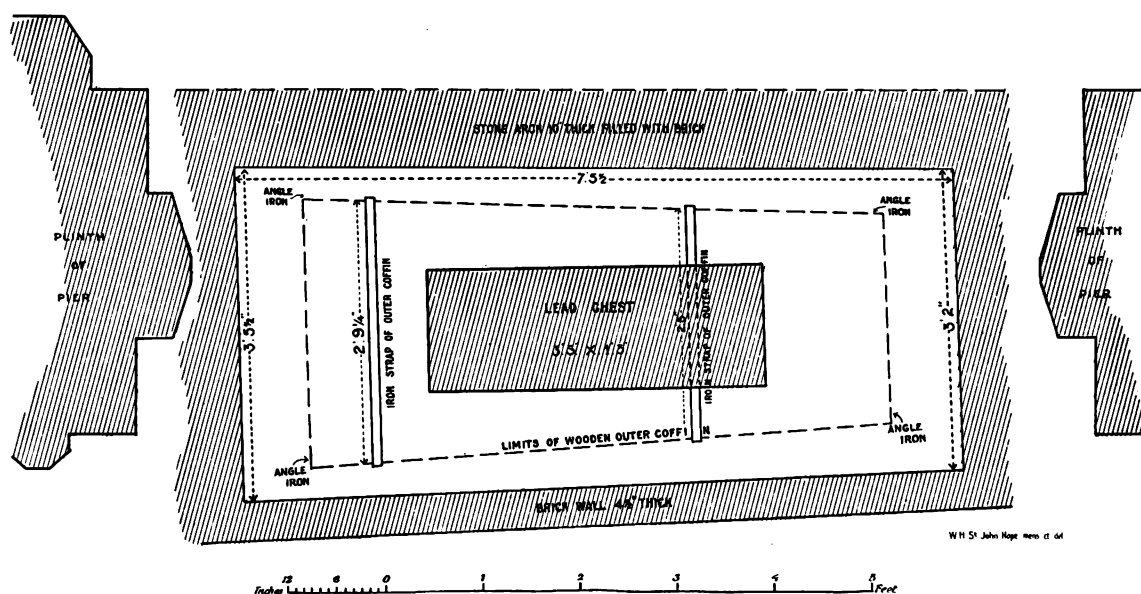


Diagram showing relative position of lead chest and wooden coffin in King Henry VI's grave.

King's memory avowedly does not cover any supposed grave, and as a matter of fact there is no vault under it.

The reference to King Henry's vault in the Bishop of Carlisle's memoir tells us so little that it has always been a matter for speculation what was actually seen in 1789.

A tentative examination made in January, 1910, by Canon Dalton and myself disclosed the existence of a brick grave or vault which contained a small lead chest, under the arch to which tradition has all along pointed, and we also ascertained that no grave had at any time been made under the first arch, immediately south of the altar, opposite the tomb of King Edward IV, probably on account of the sedilia being there.

These discoveries made it all the more imperative that a complete examination should be undertaken, and His Majesty the King having been pleased to signify his approval, a formal investigation was made on Friday, the 4th of November, 1910. There were present the Dean (Dr. Eliot), and Canons the Hon. Leonard Tyrwhitt, Dr. Sheppard, and Mr. Dalton, as representing the Chapter, the Provost of King's (Dr. M. R. James) and the Provost of Eton (Dr. Warre), as the heads of the two great foundations of King Henry VI, Dr. A. Macalister (Professor of Anatomy in the University of Cambridge), and the writer, together with Mr. Harold Brakspear (architect), Mr. A. Y. Nutt (surveyor), and Mr. A. W. Evans (verger).

As a preliminary work the marble step across the second arch had been taken up, and a bed of dry and loose building rubbish was disclosed. Three of the Chapter's workmen¹ proceeded to remove this, when there shortly came into view a brick wall $4\frac{1}{2}$ in. thick. This formed the south side of a grave or vault directly under the arch, which further clearance showed to be 7 ft. $5\frac{1}{2}$ in. long, 3 ft. $5\frac{1}{2}$ in. wide at the head, and 3 ft. 2 in. at the foot. At some time, perhaps when the quire received its new black-and-white marble floor in the seventeenth century, the slab or slabs that had covered the grave had been taken away, and the interior completely filled with dry building rubbish.

As this was being removed, there gradually came into view in the middle of the grave the small rectangular leaden chest, the top only of which had been seen earlier in the year. It was 3 ft. 5 in. long, 15 in. wide throughout, and 12 in. deep. It rested upon a band of iron, 1 in. wide, turned up at each end at a right angle, and a similar band was found standing up across the grave in its original position just to the west of the chest. Two pairs of short angle-irons were likewise found on the bottom of the grave, one pair near the head, the other near the foot, and a number of iron nails. These iron bands and angle-pieces had evidently been attached to a large wooden coffin, but this had become reduced to powder, with the exception of a few rotten pieces of the bottom under the leaden chest. The lid had apparently gone to decay or been removed when the grave had been filled up with rubbish, but not the sides, the lines of which could be plainly traced by the difference in colour in the filled-in material. It was impossible to fix the exact length of the coffin, but the position and distance apart of the iron bands showed that it measured about 6 ft. As the horizontal section of the bands measured $33\frac{1}{4}$ in. and 29 in. respectively, the coffin was wider at the head than the foot, after the mediaeval fashion, and it was apparently just deep enough to hold the leaden chest.

As there was nothing else to be found in the grave, the leaden chest was

¹ Plummeridge, Platt, and Maisey.

next carefully lifted out and placed on a table for examination. It was neatly made of sheets of cast lead, $\frac{1}{8}$ in. thick, and perfectly plain, with a closely fitting lid carefully soldered on, but without any signs of engraved or painted inscription. The once flat lid had sunk considerably under the weight of the rubbish that had been thrown upon it, and along its south edge was a longitudinal rupture about 1 ft. long. The sides and ends of the chest were quite sound and vertical, but the bottom was badly decayed in many places through contact with the wood of the coffin, and much corroded and bent inwards.

It was next decided to open the chest, and the services of a plumber¹ having been obtained, a cutting was made by him along the sides and ends just below the lid, which was then carefully raised and lifted off by the two Provosts.

Inside the chest there appeared a wooden box of a dark colour in a state of decay. It was a narrow, rectangular box with a sliding lid, 3 ft. $3\frac{1}{2}$ in. long, 10 in. wide, and about $\frac{1}{2}$ in. thick, but the sides and ends, which were about 9 in. deep, as well as the bottom, were 1 in. thick.

After the removal of the pieces of the lid, there was disclosed within the box a decayed mass of human bones, lying in no definite order, but mixed with the rotten remains of some material in which they had been wrapped. There was also a certain amount of adipocere, and of dry rubbish from the grave which had fallen in through the rupture in the lid of the leaden chest.

The fragments of the bones were reverently and carefully taken out, bit by bit, by Professor Macalister, who afterwards most kindly supplied the following note as the result of his examination of them :

5 November, 1910.

The following report contains all the information gathered from the skeleton which I examined yesterday.

The bones are those of a fairly strong man, aged between forty-five and fifty-five, who was at least 5 ft. 9 in. in height (he may have been an inch taller, but I give the minor limit).

The bones of the head were unfortunately much broken, but as far as they could be pieced together they were thin and light, and belonged to a skull well-formed but small in proportion to the stature. Some of the roof bones (occipital and temporal, frontal and parietal) had become ossified together at the sutures. The few teeth found (second molar upper right, and first molar upper left, second bicuspid lower right) had their crowns very much worn down. The portion of the one side of the lower jaw found had lost its teeth some time before death.

There were nearly all the bones of the trunk, of both legs, and of the left arm ; but I found no part of the right arm.

From the relative positions occupied by the bones, as they lay in the leaden casket when opened, it was certain that the body had been dismembered when it was put in. If

¹ Shipp.

the body had been buried in the earth for some time and then exhumed, it would account for their being in the condition in which we found them. It might also account for the absence of the bones of the right arm, as well as for the accidental enclosure of the left humerus of a small pig within the casket.

I am sorry that I can add nothing more. The state of the bones was so unsatisfactory that I could not make any trustworthy measurements.

Professor Macalister does not mention that the contents of the box were still somewhat moist, possibly on account of the 'spices' used to embalm the body at its first burial. One other feature was noticeable, that to one of the pieces of the skull there was still attached some of the hair, which was brown in colour, save in one place where it was much darker and apparently matted with blood.

While the examination of the bones was going on, the men finished the clearing out of the grave. It had been formed exactly between the piers of the arch, and their stone footings served as its ends. The south side, as already noted, was of brick, but the north side was formed of a rough stone arch, filled in with a 9-in. brick wall.¹ None of the brickwork was plastered. The bottom of the grave was of the natural chalk which underlies the chapel, with fragments of stone, etc. trodden into it, and was 3 ft. 4 in. below the aisle floor.

After the bones had been fully examined, preparations were made for replacing them in the grave.

Owing to the decayed condition of the bottom of the leaden chest, it was thought advisable to fix a new one to it outside the other, which was accordingly done, and the old bottom flattened down. The bones were then reverently placed on a large piece of new white silk and carefully wrapped up in it by the Provost of King's and Mr. Dalton, and deposited, with all the fragments, etc. found with them, in a new oak box that had been made to hold them. The lid of this was then screwed down and the box put inside the leaden chest. With it were also placed the pieces of the original box, and the iron bands and angle-pieces of the outer coffin; the lid of the chest, having been flattened out, was replaced, and soldered down. The leaden chest, now containing everything that was found in and around it, was finally lowered into the grave, which was thereupon filled up again as before.

The question now naturally arises, What evidence is there for believing that the remains found were those of King Henry VI? It is true that no mark or inscription of any kind was discovered in the grave to distinguish them as his, but any such may possibly have been on the lost or perished lid of the outer coffin. The presumption, however, in favour of the remains is, I think, fairly conclusive.

¹ The coffin may have been put into the vault through this arch, which was then bricked up.

King Henry died or was murdered in the Tower of London on 21st May, 1471, and the Issue Roll shows that £15 3s. 6½d. were paid to Hugh Brice: (i) 'for wax, linen cloth, spices, and other ordinary expenses by him appointed and spent about the burial of the said Henry of Windsor who died within the Tower of London,' and (ii) 'for wages and rewards of divers men carrying torches from the aforesaid Tower to the cathedral church of St. Paul, London, and thence to Chertsey, with the present body'.

Master Richard Martyn was also paid £18 3s. 3d. in two sums: (i) of £9 10s. 11d. for 28 ells of linen cloth of Holland and for expenses incurred both within the aforesaid Tower at the death of the said Henry and at Chertsey on the day of his burial; also for rewards given to divers soldiers of Calais watching about the body, and for the hire of barges with masters and sailors rowing by the Thames to Chertsey; and (ii) of £8 12s. 4d. to the various houses of Friars in London for masses of the dead.

The total expenses were only £33 6s. 9½d. The payment for wax, linen cloth, and spices suggests that the King's body was embalmed and wrapped in cerecloth, but nothing is said about any leaden coffin.¹

John Warkworth in his Chronicle says that King Henry was put to death in the Tower,

And one the morwe he was chestyde and brought to Paulys, and his face was opyne that every manne myghte see hyme; and in hys lyinge he bledde one the pament ther; and afterward at the Blake Fryres was broughte, and ther he blede new and fresche; and from thens he was caryed to Chyrchesey abbey in a bote, and buried there in oure Lady chapelle.²

¹ 'Hugoni Brice In denariis sibi liberatis per manum propriam pro tot denariis per ipsum solutis tam pro Cera tela linea speciebus et alijs ordinarijs expensis per ipsum appositis et expenditis circa sepulturam dicti Henrici de Windesore qui infra Turrim Londoni diem suum clausit extremum. Ac pro vadijs et regardis diversorum hominum portancium Tortos a Turri predicto usque ecclesiam Cathedrallem Sancti Pauli London. et abinde usque Chertesey cum corpore presente per breve predictum xv.li. iij.s. vj.d.ob.

Magistro Ricardo Martyn In denariis sibi liberatis ad vices videlicet una vice per manum propriam ix.li. xs. xjd. pro tot denariis per ipsum solutis pro xxvij ulnis tele linee de Holandia et expensis factis tam infra Turrim predictum ad ultimum vale dicti Henrici quam apud Chertesey in die sepulture ejusdem. Ac pro regardis datis diversis soldariis Cales vigilantibus circa corpus et pro conductu Bargearum cum Magistris et Nautis remigantibus per aquam Thamiē usque Chertesey predictam et alia vice viij^{li} xi^s iij^d pro tot denariis per ipsum solutis iij^{or} ordinibus fratrum infra Civitatem London. et fratribus sancte Crucis in eadem et in alijs operibus Caritatis videlicet Fratribus Carmel xxs. Fratribus Augustiñ xxs. Fratribus Minoribus xxs. Fratribus Predicatoribus pro obsequiis et missis celebrandis xls. et dictis Fratribus Sancte Crucis xs. Ac pro obsequiis et missis dicendis apud Chirtesey predictam in die sepulture dicti Henrici liij^s iij^d per breve predictum xviii^{li} iij^s iij^d.' Issue Roll (Pells), Easter, 11 Edward IV. No. 505.

² Ed. Halliwell, Camden Society 10 (London, 1839), 21.

This notice points to the King's body having been 'chestyde' in a wooden coffin only.

A somewhat later writer than Warkworth, Edward Hall, has the following note about King Henry's funeral :

The ded corps of Kyng Henry, with bills and gleves pompeously, (yf you call that a funerall pompe) was conveyghed from the tower, to the church of saint Paule, and there layed on a beere, where it lay the space of an whole daye : and the next day, wythout Priestes or Clarcke, Torche or Taper, syngyng or saiying, it was conveyghed to the Monastery of Chertesey, beyng distant from London .xv. Mile, and there was buried, but after he was removed to Windsore, and there in a new vawte newly intumilate.¹

This reference to the 'new vawte' is not without interest in view of the recent discoveries at Windsor. The fact, too, of the removal of the King's body to Windsor is confirmed by a payment in the account roll of the Treasurer of the College of Windsor for 1483-4 of £5 10s. 2d.

solut. in expensis circa remocionem Regis Henrici vj^{ti} de Chertsey usque huc ut patet per billam.²

The bill of details unluckily is not to be found, but there can be no doubt, not only that the King's body was actually transferred to Windsor, but that King Henry VII purposed to enshrine him there. With this intent he had pulled down the old Chapel of St. Edward and St. George, which had for a long time served as the Chapel of the Order of the Garter, and built upon its site the Lady Chapel, now called the Albert Memorial Chapel. The Pope had confirmed the transfer of certain endowments to the new chapel, and the King had actually begun his own tomb in it, when the Abbot and Convent of Westminster intervened with a claim that the body of King Henry VI should be translated from Windsor to their church for burial. The very curious evidence that was submitted before the Commission appointed by the Privy Council to decide the question has been printed by the late Dean Stanley in his *Historical Memorials of Westminster Abbey*. But it may be worth while to quote such of it as bears on the question of this paper.

The Abbot of Chertsey was the first witness, and alleged and pleaded that the aforesaid body of sacred memory of Henry VI had been formerly buried within his monastery, and by Richard, lately in deed but not of right, King of England, without the consent of him and his Convent (as he asserted), had been

¹ *The Union of the two noble and illustre famelies of Lancastre and Yorke* (London, 1548). The prosperous reigne of Kyng Edward the Fourth, fo. xxxiiij.

² Account Roll xv. 34, 60.

violently exhumed and dragged forth, and notwithstanding the protests of him and his Convent had been brought to and was in the aforesaid College [of Windsor]: he accordingly asked and urged that restitution of the holy body to his monastery should forthwith be made.

The Dean of Windsor and his two co-canons asserted that the Abbot and Convent of Chertsey had not only consented to the removal of the King's body, but the Abbot was himself the first, of his own free will, with his own hands, to open the grave; that neither the Abbot and Convent of Chertsey nor of Westminster ought to be heard in the matter because (as they asserted) that holy man Henry VI aforesaid while living had practically chosen his burying place to be made in the aforesaid College; and they urged that even though no choice of sepulture could be proved, possession was enough for them.

The representatives of the Abbey of Westminster demanded the exhumation of the blessed body and its conveyance to their monastery for a threefold reason: (i) because King Henry had chosen therein the place of his burial; (ii) because their monastery had for a long time been and was the burying place of the Kings and ancestors of the said Henry VI and was commonly known as such; and (iii) because the King was their parishioner.

The decision of the Privy Council was eventually in favour of Westminster, and on 26th July, 1498, the King executed a formal indenture with the Abbot and Convent in which he recites how 'to the pleasure of God and for the singular affection and devocion that his grace hath to his Uncle of blessed memory King Henry the vijth [he had] lately begon to make and bilde of new the chapell of our Lady within the Colleget church of Wyndesore entending to have translatid the body of his said Uncle in to the same and nygh unto him within the said chapell to have be buryed hymself'. But in consequence of the recent decision of his Council he had 'fynally determynd to convey and bring the said holy body of his said Uncle King Henry the vijth from the said Colleget Church of Wyndesore to the said Monastery of Westminster and there to be commytted to perpetuall sepulture in the chapel of our Lady within the church of the said Monastery the which chapell oure said souverain Lord entendith to make and bilde of new and in the same not farre from his said Uncle to be buryed hymself'. Because this transfer cannot be done without great cost the Abbot and Convent bind themselves by the indenture to pay the King £500 for the purpose.

Dean Stanley has shown by a quotation from the sacrist's account for 1501-2, that this large sum was actually paid over, but King Henry the Sixth's body never left Windsor, and when King Henry VII made his will on 31st March, 1509, three weeks before his death, for the last time he recounts how he proposes 'right shortely to translate' into the Monastery of Westminster 'the bodie and reliques of our Uncle of blissed memorie King Henry the VIth'.

There is yet one more notice that may be cited, the curious contemporary account by John Rous, the antiquary of Warwick, of the translation of King Henry's body from Chertsey to Windsor, and of the appearance of the remains when first exhumed.

Among the events that happened in the year 1484 he writes :

In the month of August next following, the body of King Henry VI was dug up (*effossum est*) and translated to the new collegiate church of the Castle of Windsor. There it was honourably received and with very great solemnity buried again on the south part of the high altar. That same body was then very odoriferous, not indeed from the spices employed when it was buried by his enemies and tormentors. And it was in great part uncorrupt, everywhere entire as to the beard and hair, with the face as usual, though somewhat sunken, with a more meagre appearance than ordinary. And there abounded forthwith miracles declaring the King's sanctity, as is sufficiently evident from the written accounts there.¹

There can, then, be no doubt :

- (1) that King Henry VI was buried in an ordinary grave at Chertsey;
- (2) that his remains were exhumed and conveyed to Windsor Castle, and there honourably buried again in St. George's Chapel to the south of the high altar; and
- (3) that the remains were never removed to Westminster.

In favour of the claim that the contents of the grave lately opened at Windsor are those of King Henry it seems to be established :

- i. that they are those of a man of about the King's age and, so far as we know, of his personal characteristics;
- ii. that they belong to some one who may have died a violent death, as is shown by the blood-clotted hair;
- iii. that their condition, according to Professor Macalister, is not inconsistent with their burial in the earth in a coffin for some time, which in King Henry's case was thirteen years;
- iv. that the care with which the remains were collected and enclosed in the leaden chest points to their being those of a person of some importance;

¹ 'Et in mense Augusti proximo sequente effossum est corpus regis Henrici Sexti, et usque novam ecclesiam collegiatam castri de Wyndzour est translatum, ibi honorifice receptum, et cum maxima solempnitate iterum tumulatum ad australem partem summi altaris. Erat illud tunc sacrum corpus valde odoriferum, non quidem ex speciebus apposis, cum per inimicos atque tortores suos erat sepultum. Et pro magna parte erat tunc incorruptum, capillis et crinibus ubique fixum, facie consueta sed parvum depressa cum macilentiori aspectu solito. Et statim affluebant miracula regis sanctitatem profitentia, ut in scriptis ibi sufficienter evidet.' *Johannis Rossi antiquarii Warwicensis Historia Regum Angliae*, ed. T. Hearne, 2nd edition (Oxford, 1745), 217.

v. that they were deposited in a place of honour, and in a vault specially made for them.

The placing of this chest within a full-sized coffin may possibly have been done from a desire to support the reputation of the uncorruptibility of the body described by John Rous; but it is equally possible that it was done for greater dignity and reverence.

Lastly, there is no other person than King Henry VI recorded or known to have been buried in St. George's Chapel to whom remains enclosed in so remarkable a way could possibly belong.

XXV.—*The Plan of the First Cathedral Church of Lincoln.* By JOHN BILSON,
Esq., F.S.A.

Read 25 May, 1911.

It is hardly too much to say that no period in the history of mediaeval church architecture in England is so important as that which immediately followed the Norman Conquest. It is important in respect of the marvellous extent and quality of its own achievement; of its influence on the subsequent history of English architecture; and also (which perhaps cannot be asserted of any other period) of its influence on the architectural development of western Europe generally. By the time of the Conquest the Norman school was fully formed, and was achieving such masterpieces as Jumièges and Saint-Étienne, Caen. The Conquest provided an opportunity of which the immense energy of the Norman bishops and abbots took full advantage. In their greater churches they built on a scale which they had hitherto rarely attempted in their own country. Such activity bred experience, readiness in solving structural problems. The Norman character naturally led them to develop the logic of construction, and they were innovators in the practice of expedients which only needed fuller development to reach the essentials of what we call Gothic. It is true that this great development was not English; it was essentially Norman, the accident of the Conquest, but its importance is none the less on that account, and needs fuller recognition than perhaps it has yet received.

One of the most remarkable characteristics of this development of the Norman school in England is the expansion of plan which is exemplified in the larger churches which have survived, either wholly or in part, and in others the complete plans of which are known. Some considerable additions to our knowledge in this respect have been made during recent years, especially by excavations. Such are the plans of the eastern parts of the abbey churches of St. Augustine, Canterbury, and St. Mary, York,¹ the plan of the east end of Durham Cathedral,² and the recent investigation of the plan of the Confessor's church at Westminster.³ I am now able to put before you another plan, that of the first cathedral church of Lincoln. It is true that some little was already known of

¹ *Archaeological Journal*, lxiii. 106.

² *Ibid.*, liii. 1.

³ *Archaeologia*, lxii. 81.

this plan, but it is only by recent excavations that a sufficient number of points have been fixed to enable a complete plan to be made with some approach to certainty as regards its main lines.

The builder of the church was Bishop Remi, the almoner of the abbey of Fécamp, who provided a ship and twenty knights for Duke William's expedition which resulted in the conquest of England. He was the first of the Norman ecclesiastics to receive a bishopric in the conquered country, succeeding Wulwig as bishop of Dorchester in 1067. The Council of Windsor in 1072 having ordered that bishops should fix their seats in cities, and not in villages, the see of Dorchester was removed to Lincoln. The precise date of the transfer has been very variously stated, but it is now generally placed between 1072, when Remi signed at the Council of Windsor as bishop of Dorchester, and 1075, when he appears at the Council of London as bishop of Lincoln. As Lincoln is not mentioned at the later council among the sees yet to be transferred, the inference is that the change had already taken place.¹ The date when the building of the new cathedral church was begun can be fixed with more precision. The charter granted by William Rufus in 1090² recites a charter of the Conqueror, which relates that the latter ordered Bishop Remi to build the church of the blessed Mother of God, as the seat of his whole bishopric, and that this was done with the consent of Pope Alexander and his legates, and of Archbishop Lanfranc; and that the Conqueror, ordering the building of the church, gave a sufficient area for the building, for the dwellings of the clergy, and for the cemetery. The beginning of the building may therefore be placed between the Council of Windsor in 1072 and Pope Alexander's death in 1073.

Here then, on 'the sovereign hill of Lincoln', eastward of the castle, and just within the Roman wall on the east of the city,³ Bishop Remi built his church, as Henry of Huntingdon aptly puts it, 'strong as the place was strong, fair as the place was fair, dedicated to the Virgin of virgins, which should be both a joy to the servants of God, and as befitted the time unconquerable by enemies.'⁴ Later chroniclers tell us that the church was built quickly,⁵ and it was ready for con-

¹ *Victoria History of the Counties of England: Lincolnshire*, vol. ii, p. 9, where references to the authorities will be found. See also *The Architectural History of Lincoln Minster*, by the Rev. George Ayliffe Poole (*Associated Architectural Societies' Reports*, iv), Appendix of Documents, p. 36; and *Recorded History of Lincoln Cathedral*, by the Rev. J. F. Dimock (*ibid.*, ix, 190).

² Dugdale, *Mon. Angl.* (1830 ed.), vi. 1270; Bradshaw and Wordsworth, *Lincoln Cathedral Statutes*, part ii, p. 1.

³ The outer face of the apse must have been only some 12 to 15 yards within the Roman wall.

⁴ Henry of Huntingdon, *Hist. Angl.* (Rolls Series), 212.

⁵ Giraldus Cambrensis, *Vita S. Remigii* (Rolls Series), vii. 19; John de Schalby (in the same volume), 194.

secration when Bishop Remi died on May 6, 1092,¹ three days before the date fixed for the ceremony. Henry of Huntingdon says that it was already finished,² and this is confirmed by the fact that nothing is recorded of any building work by Remi's successor, Robert Bloet, though the latter is said to have given vestments and ornaments to the church. It is, however, confirmed more decisively by the character of the original work at the west end of the church,³ which presents strong analogies with what had then just been built, or was then being built, at the west end of Saint-Étienne and at Saint-Nicolas, at Caen.

It is evident, then, that any exact knowledge of the architecture of Bishop Remi's church must be the more valuable because it was one of the earliest churches built in England by the Norman conquerors, and because, too, it was built quickly during the twenty years between about 1073 and 1092. The recovery of its plan is also important for another reason; the knowledge of what already existed must necessarily throw some light on the precise manner in which the present church was built, and so facilitate the solution of the difficult problems which still remain to be unravelled with regard to the history of the works of St. Hugh and his immediate successors.

Before, first, describing what has hitherto been discovered of Bishop Remi's building, and then showing how these remains enable us to reconstitute the plan of his church, I may explain how the recent investigations came to be undertaken.

In 1908, Professor Lethaby and I spent a few days together at Lincoln to study what remains of the eleventh- and twelfth-century works in the cathedral. With the exception of the very important original work at the west end,⁴ the only traces of Bishop Remi's church then known were the fragments of the foundations of the choir and its great apse beneath the choir stalls,⁵ and the foundations of

¹ Giraldus Cambrensis, *ibid.*, vii. 21, and preface, p. xix. '... sepultus est a fratribus in eadem ecclesia, in prospectu altaris sanctae crucis.' (*Ibid.*, vii. 22.)

² 'Cum ecclesiam Lincolnensem iam perfectam dedicaturus esset.' Henry of Huntingdon, *Hist. Angl.* (Rolls Series), 216.

³ The western towers, however, do not appear to have been carried up higher than the level at which the original work now finishes, just below the twelfth-century arcade which runs across the west front immediately above the arches of the great lateral recesses.

⁴ We hope to make this the subject of a separate study when our investigation has been completed.

⁵ The late Precentor Venables records that these were discovered by Mr. T. J. Willson in 1852 (*Archaeological Journal*, xliv. 196). A conjectural sketch-plan, based on these remains at the east and west ends, was published by the Rev. George Ayliffe Poole in illustration of his paper, *The Architectural History of Lincoln Minster* (*Associated Architectural Societies' Reports*, iv. 11), but he, and Precentor Venables following him (*Archaeological Journal*, xl. 173), assumed a transept of the same width as the later transept, and a choir of only two bays in front of the apse.

the north-west angle of the north transept which had been found in 1903 and marked on the pavement.¹ We came to the conclusion that comparatively small excavations would probably give further fixed points for a definite plan, and, on our suggestion, Mr. W. H. St. John Hope obtained permission from the Dean and Chapter to make excavations during the Lincoln meeting of the Royal Archaeological Institute in July, 1909. These resulted in the discovery of foundations of the east end of the north choir aisle, and of the eastern bays of the wall of the north aisle of the nave. The investigation then left incomplete was continued by further excavations kindly undertaken by the Dean and Chapter, and carried out in January, February, and March, 1911, in the north transept and its eastern aisle and in the western bays of the nave. The trials were only made in those places which were likely to furnish data for the principal lines of the plan, and, although there is no doubt that much more remains below floor-level, it could only be discovered by much more extensive excavation and disturbance of the pavement than could be suggested under the present conditions. As the north-west angle of the north transept had already been fixed, the excavations were confined for the most part to the north side of the church, with the object of obtaining sufficient data for this half of the plan.

I will now proceed to describe in detail the remains which have furnished the fixed points on which my plan is based. I must first, however, gratefully acknowledge the kindness of the Dean and Chapter in consenting to undertake the excavations carried out under Mr. Hope's direction in 1909, and those under my direction in 1911, and in defraying the cost of the work. Personally I owe especial thanks to Archdeacon Bond, the Precentor, for the very active interest which he has taken in the investigation. I ought also to add an appreciation of the intelligent and helpful way in which the actual work was conducted by Mr. Henry J. Davis, the master-mason of the cathedral.

The remains of the eleventh-century church which are now known are shown on plates LXXV and LXXVI, where they are distinguished by dark hatching. The dotted lines have been added to continue the lines of what was actually found, in order to make the plans more intelligible, but it must be understood that these dotted lines are mere inferences from what is distinguished by the dark hatching, and that they do not themselves represent anything which is actually known to

¹ From these and from some indications of smaller finds kindly given me by Mr. John Allan, the cathedral clerk of works, and Mr. Henry J. Davis, the master-mason, I made a conjectural plan for the Lincoln meeting of the Royal Archaeological Institute in July, 1909, which has proved to be not very far from the truth.

exist. Foundations of later or uncertain date are shown by light dotted shading.¹ The single unshaded lines represent the plan at the floor level of the adjacent parts of the present church.²

Beginning at the east end, we have the fragments of the great apse and eastern part of the choir³ which remain beneath the choir stalls, between the sleeper-walls beneath and on either side of the lower range of stalls on each side of the present choir (plate LXXV).

On the north side, a length of the outer face of the apse remains at A, B, with the south-east quoin of a pilaster-buttress at B, 9 in. wide and $4\frac{3}{4}$ in. in projection. Two courses of face-work remain here above the foundation, the upper course being 10 in., and the lower 9 in., in height. The top of the upper course is 2 ft. 2 in. below the floor of the present choir between the stalls, or about 11 in. below the level of the present nave floor. The face-work is axed, with rather broad strokes, and the joints are about $\frac{3}{4}$ in. thick.⁴

On the inside of the apse, a length of the face remains at C, D, most of it two courses in height corresponding with the two courses of the outer face. The thickness of the wall between the outer and inner faces is 7 ft. 4 in. The apse widened out to the choir by three recessings of the wall-face. The westernmost sets in 13 in. at G, from which there is a length of 5 ft. 4 in. to another set-in of 13 in. at F, and a length of 1 ft. 8 in. to E. Here the masonry of the springing of the apse has been robbed, but what remains and a development of the apse curve show that the recess at E was also 13 in.⁵ From G westward to K the inner wall-face remains only to the height of a single course, corresponding to the lower of the two courses remaining further east. The rubble core of a wall-pier remains at H, J, and the wall-face where robbed shows that this pier was 3 ft. 4 in. wide,

¹ All the foundations shown are from my own measurements, except the north-west angle of the north transept where my plan shows the lines which are marked on the floor.

² On pl. LXXVI, the existing plan of the west end, beyond the doorways to the Morning Chapel and Consistory Court, is drawn in detail. Actually existing eleventh-century work or (as regards those parts which have been cased) parts which may be presumed to be of eleventh-century date are distinguished by dark hatching. All later work, mediæval or modern, is shown by dotted shading, without distinction of date.

³ Mr. Ayliffe Poole's paper contains a plan of these fragments (*Associated Architectural Societies' Reports*, iv. 111). A better plan by Mr. J. J. Smith illustrates Precentor Venables' paper in the *Archæological Journal*, xlv. 194 (plan no. 1), and was also published in *The Builder*, lii. (May 21, 1887) 755. It is curious that both plans are inaccurate; the former shows only two projections between the choir and apse, and the latter shows two on the north and three on the south. The fragments are also shown, again incorrectly, on a plan of the choir in *Archæologia*, xlvii, p. 44, pl. ii.

⁴ In the original masonry bared during these excavations, the joints are generally from $\frac{3}{4}$ to 1 in. in thickness.

⁵ This is the projection which is omitted in Mr. J. J. Smith's plan.

with its east face 10 ft. 8 in. from G. A trace of a face at the side of the rubble core indicates that the wall-pier H, J had a projection of at least 1 ft. 8 in. The single course of the wall-face extends westward only to K; 2 ft. 2 in. beyond the west side J of the wall-pier.

On the south side, the indications of the same plan are less complete. The rubble core of the apse remains, but the face has gone, except on either side of the angle L (corresponding to F on the north side), and except about two-thirds of the broad face to the west of L. At M is the rubble core of a wall-pier, as on the north side, but the face of the wall itself cannot be seen, though the face of the later sleeper-wall appears to follow the same line.

The clear internal width of the choir, as indicated by the fragments described above, was about 29 ft. 6 in., and the internal width at the springing of the apse curve was about 23 ft.¹

The remains of the north aisle of the choir were discovered in the excavations of July, 1909, and they prove that the eastern termination of the aisle was square externally, and apsidal internally. At N (plate LXXV) was found the external face of the aisle wall, and, at the east end of this north face, a pilaster buttress, 4 ft. 10 in. in width, with a narrow pilaster projection on each side of it. The remaining masonry here is 3 ft. 1 in. below the aisle floor (about 1 ft. 11 in. below the level of the present nave floor) to the top of a course 8 in. in height, below which the foundation was not bared. Close to the northern face of the buttress is the foundation of the later aisle wall. At O is a fragment of the rough external face of the east wall. On the inside of this wall, the northern part of the internal face of the apse remains at P, Q, with its springing at Q set in 10¼ in. from the internal face of the aisle wall. The level of the remaining masonry here is the same as that of the outer face of this wall. The thickness of the aisle wall at this level is 4 ft. 8½ in. Nothing more could be found here on account of interments, and to the south the masonry of the apse is interrupted by a foundation wall which was traced from R to S. The north face of this wall, which runs obliquely down the aisle, is built for the most part of eleventh-century stones, but it seems to be simply a broad foundation added to the north face of the earlier choir wall, to receive the main piers of St. Hugh's choir.

Further west, at T, a fragment was found of the wall of the east aisle of the north transept. A single stone, 1 ft. 6½ in. long, remains of an external chamfered plinth course, 9 in. in height, its top being 8 in. below the aisle floor (about 6 in. above the level of the present nave floor). One course of face-work remains below

¹ These dimensions are as accurate as I have been able to fix them by careful measurement, but the hatches in the floor of the stalls, by which alone access is gained to these remains, are some distance to the west of the apse itself.

the plinth, set on a foundation of two stepped footings, the upper being 2 ft. $1\frac{3}{4}$ in., and the lower 2 ft. $6\frac{1}{4}$ in., below the aisle floor level, each footing projecting $9\frac{1}{2}$ in. The thickness of the wall here is 5 ft. $7\frac{1}{4}$ in. below the plinth, the chamfer of which has a projection of 3 in. This plinth, however, was not that of the wall itself, but of a pilaster buttress at its south end, next the internal angle which it forms with the wall of the north choir aisle.

The other remains of the east aisle of the north transept were bared in the excavations of January—February, 1911.¹ At *u* is a single stone, 1 ft. 4 in. long, of the chamfered plinth of the outer face of the east wall, at the same level as the plinth at *r* (described above), with a single course of ashlar, $7\frac{1}{2}$ in. high, above the plinth. The inner face of this wall could not be found, but, from what remains at *r*, it would seem that the wall was about 4 ft. 2 in. thick below the plinth. Further to the north at *v*, is the pilaster buttress of double projection at the northern end of the east face of this wall, the remaining length of the principal face of the buttress being 3 ft. $10\frac{1}{2}$ in. This fragment at *v*, like that at *u*, consists of a course of ashlar $7\frac{1}{2}$ in. high, above the plinth, and a chamfered plinth 9 in. high, with a course of ashlar below. The chamfers of the plinths at *u* and *v* measure 3 in. in height and 4 in. in projection. Of the north wall of this aisle, only a fragment, 1 ft. 4 in. long, of the external face could be found, at *w*, with the rubble core behind it, but the internal face had been removed for a grave. Part of the rubble core of this north wall was also found at *x*, but no face-work. The fragment at *w* and the north side of the opening at *d'* indicate about 3 ft. 9 in. as the thickness of this north wall of the aisle.

We come now to the remains of the north transept itself.

The north-western angle, *y*, was found in 1903, and its lines were marked on the pavement. The north wall was 4 ft. 9 in. in thickness. Externally, on the north side of the angle, was a pilaster, $8\frac{1}{2}$ in. in projection (in line with the internal face of the west wall) and $11\frac{1}{2}$ in. on the face, beyond which the buttress extended for a length of 4 ft. to the north. This evidently enclosed the staircase which is most frequently found at this angle of the transept.

The other remains of the north transept were discovered in the excavations of January—March, 1911, which were very successful.

At *z* is the north-east internal angle, with a projection in the angle, $11\frac{1}{2}$ in. wide on its south face, and 11 in. wide on its west face. This remains as a single course of ashlar, $10\frac{1}{2}$ in. in height, the top of which is 1 ft. 3 in. below the floor level.² This angle, with the north-west angle, determines the internal width of the transept as 28 ft. 9 in.

¹ Those at *u* and *v* had already been discovered in 1900, during the construction of a wind-trunk for the organ, but they had not been marked on the pavement.

² The floor level of the north transept is the same as that of the nave.

At A' is the northern buttress of the north-east external angle, 4 ft. 11 in. wide below the plinth, flanked by a narrow pilaster projection on its west side (that on the east side had gone). The quoin stone of the chamfered plinth remains at the eastern angle. The plinth course, the top of which is 6 in. below the floor level, is 9½ in. in height, with a course of ashlar below. The chamfer of the plinth measures 3 in. in height, and 3 in. in projection.¹

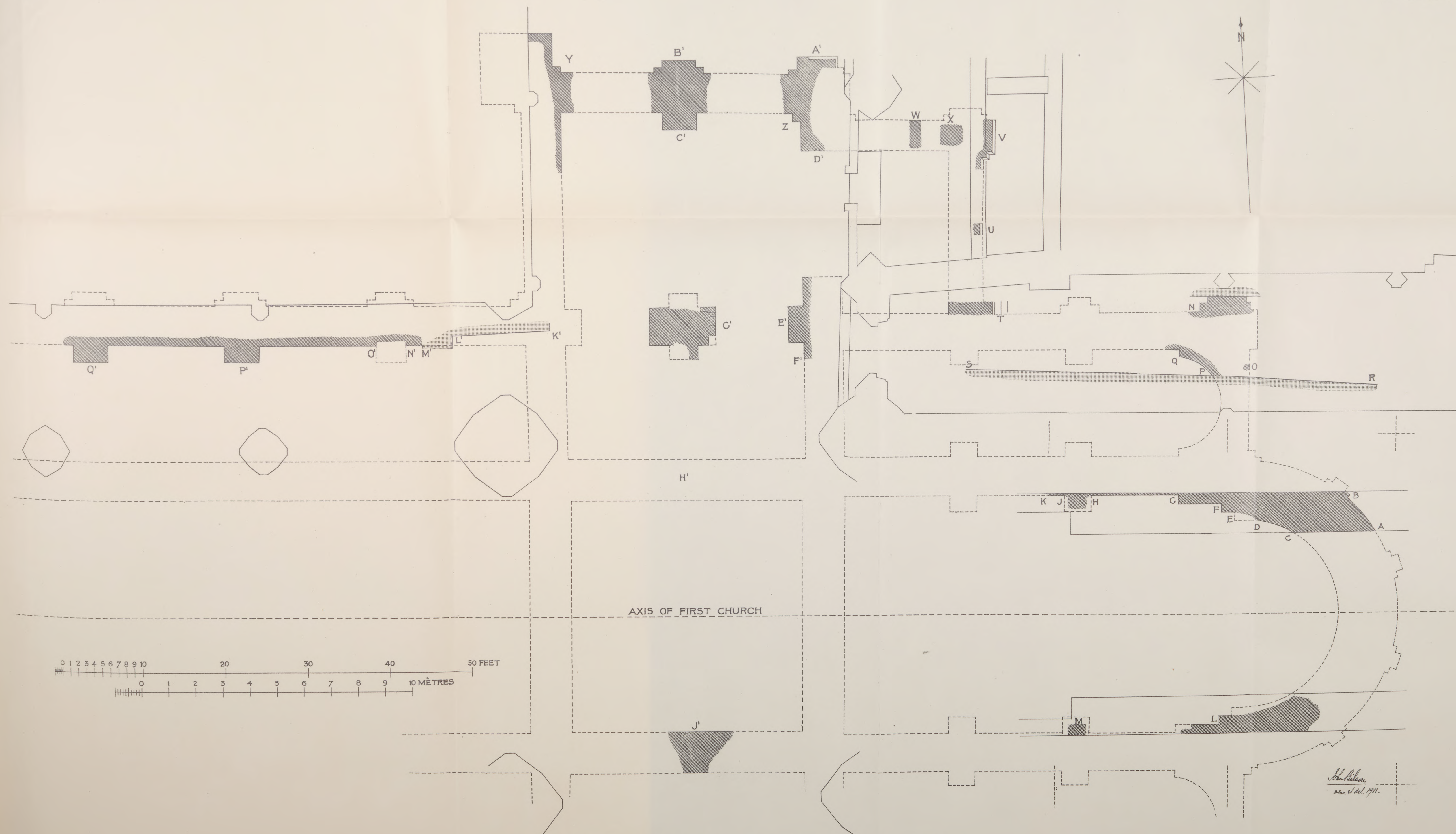
In the centre of the external face of the north wall, at B', is a buttress, 4 ft. in width, flanked by a narrow pilaster projection on each side. On the inner face of the wall, at C', is a wall-pier, 4 ft. 1½ in. in width, and 2 ft. in projection. The top of the remaining masonry, which is axed ashlar on both faces, is from 11 to 12 in. below the floor level.

The inner face of the east wall of the north transept was followed from the north-east internal angle described above to the opening into the east aisle, both angles of which were found, giving an opening of 15 ft. 5 in. On the northern return face, at D', where the top of the remaining ashlar walling is 1 ft. 1 in. below the floor level, is a chase about 8 in. wide and 1¼ in. deep, apparently for a screen across the opening. To the south of this opening, where the top of the remaining masonry is also 1 ft. 1 in. below the floor level, is a wall-pier at E', 4 ft. 6 in. in width, with a projection of 1 ft. 10 in. The northern angle of the opening from the north transept to the north choir aisle is at F', 1 ft. 10 in. to the south of this wall-pier. The outer face of this east wall is lost in the foundation of the thirteenth-century arcade.

In the centre of the north transept, at G', in line with the wall-pier E', is the foundation of the pier which carried the transept gallery. This measures 8 ft. 0½ in. in length from east to west, and 4 ft. 6½-7½ in. in width from north to south. On its south face was a wall-pier, with a projection of 1 ft. 9 in., only the eastern quoin of which remains, the western having been robbed for a grave. Doubtless there was a similar pier on the north face, but all trace of this had been removed for a grave. Of the ashlar facing of this pier, two stones at the north-east angle, one on the eastern part of the south face, and most of the west face and north-west angle, are all 10½ in. in height, their top being about 1 ft. below floor level. The remaining facing only exists to the level of the bottom of this course.

In order to ascertain whether the gallery over the transept only extended as far as the line of the aisle walls, as at Saint-Étienne, Caen, Winchester, &c., or whether it extended over the whole area of the transept arm up to the cross-

¹ It should be remarked that, whereas the other chamfered plinths found at T, U, and V are at the same level, which is also about the level of the chamfered plinth on the outside of the west front, the level of this plinth at A' is about 1 ft. lower.



LINCOLN CATHEDRAL—PLAN SHOWING THE REMAINS OF THE FIRST CHURCH (EASTERN PART)

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John Wilson
Nov. 14. 1911.

ing piers, as at Jumièges¹ and originally at Bayeux,² an excavation was made at \mathfrak{H}' , midway between the northern piers of the original crossing, but no result was obtained, owing to interments at this point. Trial was therefore made at \mathfrak{J}' , midway between the southern piers of the crossing, and here we found a wall, 5 ft. 1 $\frac{1}{4}$ in. in thickness, faced with ashlar on each side, which formed a kind of continuous sleeper-wall between the south-east and south-west piers of the original crossing. The top of the remaining masonry is 1 ft. 3 in. below the floor level.

The remains of the three eastern bays of the north aisle of the nave were discovered in the excavations of July, 1909. In the eastern bay we found the southern face of a foundation wall $\mathfrak{K}'\mathfrak{L}'$, running obliquely, and built of eleventh-century axed stones with fairly thick joints, but this is evidently only the foundation of the thirteenth-century aisle wall, faced with old material. A little further west, at $\mathfrak{M}'\mathfrak{N}'$, we came upon the inner face of the eleventh-century aisle wall, the top of the remaining ashlar walling being 1 ft. below the floor level. At $\mathfrak{N}'\mathfrak{O}'$ the facing is interrupted for a length of 3 ft. 7 in., where a wall-pier has been removed. From \mathfrak{O}' the face extends for a length of 14 ft. to a wall pier \mathfrak{P}' , 4 ft. 3 in. in width and 2 ft. in projection; then a further length of 14 ft. 1 in. to another wall-pier \mathfrak{Q}' of the same width and projection. These give a bay-width of 18 ft. 4 in. from centre to centre. The external face of the original aisle wall is lost in the foundation of the thirteenth-century aisle wall.³

The other remains of the nave aisles were found in the excavations of January—February, 1911. Having ascertained the bay-width, there was nothing to be gained by following the whole length of the north aisle wall. Excavations were therefore resumed in the third bay, from the west, of the present north aisle. At \mathfrak{R}' (pl. LXXVI) we again came upon the inner face of the eleventh-century aisle wall, followed by a length of 4 ft. 4 in., where the interrupted face showed that a wall-pier had been removed, the internal angle of the pier still remaining at \mathfrak{S}' . From this point the wall-face extends for a length of 14 ft. 1 $\frac{1}{2}$ in. to another wall-pier \mathfrak{T}' , 4 ft. 3 in. in width and 2 ft. in projection; then for a further length of 12 ft. 10 $\frac{1}{2}$ in. to the eastern face \mathfrak{U}' of another wall-pier,⁴ the remainder of which had been removed for an interment. The length (not excavated) between \mathfrak{Q}' and \mathfrak{R}' gave an average width for the four intervening bays of 18 ft. 5 $\frac{1}{2}$ in. each, centre to centre. The width of the third bay from the west is 18 ft. 5 in., centre

¹ Roger Martin du Gard, *L'abbaye de Jumièges* (Montdidier, 1909), p. 74 and pl. iii.

² *Cathédrale de Bayeux: Reprise en sous-œuvre de la Tour Centrale par M. Flachet. Description des travaux par MM. H. de Dion et L. Lasvignes* (Paris, 1861).

³ So also in the western bays of the north aisle.

⁴ The top of the remaining masonry bared in these western bays is 9 $\frac{1}{2}$ to 10 in. below the level of the floor.

to centre, and that of the second bay, 17 ft. 1½ in., assuming that the wall-pier at u' was the same width as the others.

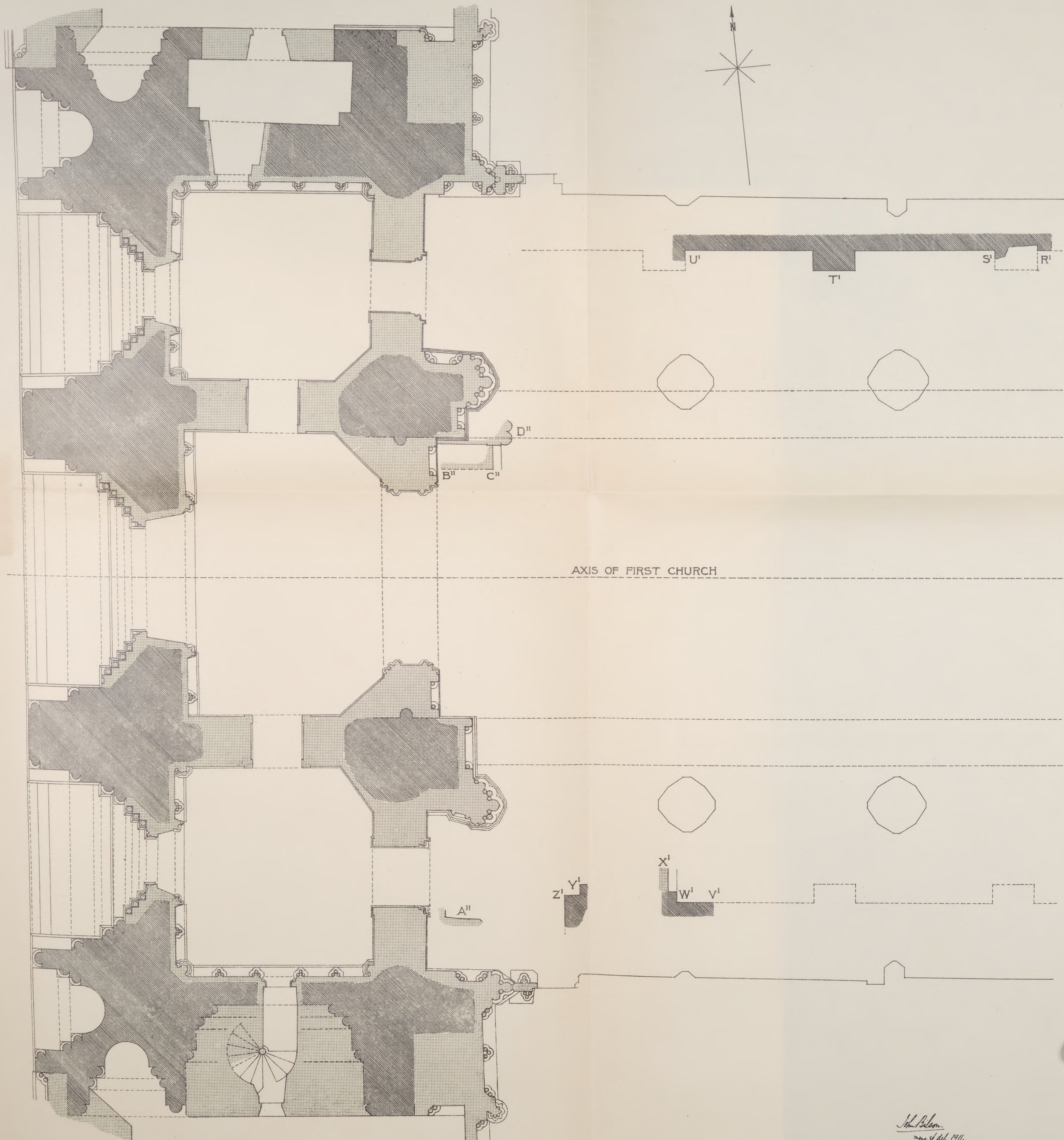
From u' the trench was continued for a length of 7 ft. 8 in. westward, without finding anything. Beyond this, a length of 7 ft. in front of the door to the Morning Chapel was not opened, and an excavation from this point up to the west end of the present aisle gave no result, for all original facework had been removed for interments.

In consequence of these negative results at the west end of the north aisle, an excavation was made in the western part of the south aisle, in February, 1911. The inner face of the eleventh-century aisle wall was bared at v', and enables us to determine the internal width of the nave and aisles as 66 ft. 5 in. West of this, at w', is what seems to be the eastern quoin of a wall-pier, but its projection is only 1 ft. 1 in. Against the north face of this pier abuts a later wall x', built of eleventh-century stones with thin joints; this seems to be a thirteenth-century sleeper-wall across the aisle. At a distance of 9 ft. 11 in. from the eastern face of the pier w' is the western quoin of a pier y',¹ which also projects 1 ft. 1 in., but the wall-face here is about 8 in. further to the north than the wall-face at v'. The part to the east of y' has been removed for a grave. At z' (1 ft. 7 in. west of y') the wall shows a quoin returning southward for a length of 3 ft. 3 in. and more.² It is difficult to account for this return, unless it was an opening in the aisle wall. Further west, and just to the east of the west end of the present aisle, a further foundation was found which is shown at A'', the top of which is 1 ft. 6 in. below the floor level; it is faced with axed stones, but it does not seem to be possible to connect it with the eleventh-century plan. South of w', trial was made for the external face of the aisle wall, but nothing could be found, and Mr. Davis informs me that, when an excavation was made here for pipes, no old face was seen. It is probable that here, as elsewhere, the eleventh-century masonry was simply extended to form the foundations for the thirteenth-century work.

In July, 1909, an excavation was made around the base of the western respond pier of the north arcade of the nave. The southern face of a broad foundation was bared at B'', C'', but, although it is built of eleventh-century stones, its date is uncertain. At D'' were found two single stones of shafts, re-used in the masonry of the foundation, which doubtless came from the main piers of the eleventh-century nave; these shafts were 1 ft. 5½ in. and 11½ in. in diameter re-

¹ Mr. Allan had previously told me that y', z' had been bared 1903 for the late Mr. J. J. Smith, formerly clerk of works to the cathedral under the late Mr. J. L. Pearson, R.A.

² The heights from the top of the remaining masonry to the floor level are, at v', 9 in.; at w', 1 ft.; and at y', z', 1 ft. 11 in.



AXIS OF FIRST CHURCH

0 1 2 3 4 5 6 7 8 9 10 20 30 40 50 FEET
0 1 2 3 4 5 6 7 8 9 10 MÈTRES

LINCOLN CATHEDRAL—PLAN SHOWING THE REMAINS OF THE FIRST CHURCH (WESTERN PART)

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John Bale
man. & del. 1911.

spectively. Another re-used stone found here came from the mid-twelfth-century work, and had been reworked on one face in the thirteenth century.

Such are the data from which I have reconstructed the plan of the original church shown on pl. LXXVII,¹ which I will now proceed to discuss.

The plan of Bishop Remi's church consisted of a choir of three bays, terminating eastward in an apse, and flanked by aisles which extended eastward as far as the springing of the great apse; a transept, each arm of which consisted of two bays, one of which was opposite the aisles of the choir and nave, and the other, beyond to the north and south, had an eastern aisle of a single bay; a nave of ten bays in length, with north and south aisles; and two western towers at the ends of the aisles, with the nave extended an additional bay between them. These towers do not appear to have been carried up quite so high as the tops of the nave walls, but, below, this western work still remains for the most part, though it has undergone considerable alteration.

The plan is a remarkable orderly and logical piece of work. Indeed it is due to the fact that it so closely conforms to the Norman² type that we have been able to recover its main lines with comparatively little excavation.

In reconstituting this plan, and in comparing it with other works of the same school, it will be necessary to refer to several great churches which it will be convenient to enumerate here, with some notes as to their relative dates.

The beginnings of the Norman type are represented by the abbey church of Bernay (Eure), begun by the Duchess Judith before her death in 1017, and finished probably soon after the middle of the eleventh century.³ The great expansion of the architectural ideas of the Norman school is exemplified by the magnificent abbey-church of Jumièges, begun in 1040, and finished in 1067, when it was consecrated in the presence of the Conqueror.⁴ The abbey-church of Mont-Saint-Michel, a smaller church, was begun in 1023, and its nave seems to have been built between 1048 and 1090.⁵ It is, however, the Conqueror's own church of Saint-Étienne, Caen,⁶ which was founded in 1064, that will furnish

¹ On pl. LXXVII my plan of the eleventh-century church is reproduced in red, over the plan of the existing church reduced from the admirable plan made by Mr. E. J. Willson, F.S.A., in the thirties of the last century, and now in the possession of the Society.

² Using the term 'Norman' in its proper sense, and not as a nickname for a 'period'.

³ Chanoine Porée, *L'église abbatiale de Bernay*, in the volume of the *Congrès archéologique de France tenu à Caen*, 1908, pp. 588-614.

⁴ Roger Martin du Gard, *L'abbaye de Jumièges*, pp. 31-2.

⁵ Paul Gout, *Le Mont-Saint-Michel* (Paris, 1910).

⁶ G. Bouet, *Analyse architecturale de l'abbaye de Saint-Étienne de Caen* (Caen, 1868), and in the *Bulletin Monumental*, vols. xxxi and xxxii; L. Serbat, in the volume of the *Congrès archéologique de France tenu à Caen*, 1908, pp. 21-50.

most material for comparison with eleventh-century Lincoln. Indeed, as we shall see, the analogies in many points are so close as to suggest that Bishop Remi's master of the works must have been employed on the Conqueror's church before he began his work at Lincoln. Three churches of the school of Saint-Étienne, Caen, will serve to illustrate the type,¹ especially as their eastern arms (now missing at Saint-Étienne) are complete; Saint-Nicolas, Caen, a parish church begun by the monks of Saint-Étienne about 1083; the abbey-church of Cerisy-la-Forêt² (Manche), which was built during the second half of the eleventh century, and the abbey-church of Lessay³ (Manche), which was begun at the end of the eleventh or beginning of the twelfth century. Probably a little earlier than or contemporary with the earlier of these three is the older part of the abbey-church of Montivilliers (Seine-Inférieure), not far from Remi's own abbey of Fécamp. The abbey-church of Saint-Georges-de-Boscherville⁴ (Seine-Inférieure) is a later example of the same type.

Of the great churches built in England under Norman influence, only very few were earlier than Lincoln, and these are now only represented by more or less fragmentary remains. The earliest, of course, was the Confessor's church of Westminster, the plan of which has recently been so excellently elucidated.⁵ Lanfranc's cathedral church of Canterbury, begun in 1070 and finished in seven years, closely followed (as Professor Willis showed) the type of Saint-Étienne, Caen.⁶ The abbey-church of St. Augustine, Canterbury,⁷ seems to have been begun between 1070 and 1073.

Of the churches mentioned above, only St. Augustine's, Canterbury, had an ambulatory plan. All the others, like Lincoln, seem to have terminated eastward in three parallel apses.⁸ The earliest Norman plan of this type is Bernay,

¹ It is not, of course, suggested that any of these three churches influenced the plan of Lincoln. They are introduced simply as later illustrations of the 'type' of Saint-Étienne, Caen—the type which Lincoln so closely followed.

² André Rhein, *L'église abbatiale de Cerisy-la-Forêt*, in the volume of the *Congrès archéologique de France tenu à Caen*, 1908, pp. 545-87.

³ E. Lefèvre-Pontalis, in the volume of the *Congrès de Caen*, pp. 242-6.

⁴ A. Besnard, *Monographie de l'église et de l'abbaye Saint-Georges-de-Boscherville* (Paris, 1899).

⁵ *The Church of Edward the Confessor at Westminster*, by the Very Rev. J. Armitage Robinson, D.D., F.S.A., in *Archaeologia*, lxii. 81-96.

⁶ R. Willis, *The Architectural History of Canterbury Cathedral* (London, 1845).

⁷ Sebastian Evans, jun., *Excavations at St. Augustine's Abbey, Canterbury*, in *Archaeologia Cantiana*, xxvi. 1; *Archaeological Journal*, lxiii. 106, with plan by Mr. Harold Brakspear, F.S.A.

⁸ This, though probable enough, is not absolutely certain of Mont-Saint-Michel, Saint-Étienne, Caen, or Canterbury Cathedral. The precise plan of the terminations of the choir aisles of Jumièges is also uncertain (see *Archaeologia*, lxii. 96), and the plan of those of Westminster is an inference only. Sainte-Trinité, Caen, also had three parallel apses, but the plan was not quite of the normal type.

where the aisle apses were curved both externally and internally.¹ At Montivilliers, Saint-Nicolas, Caen, Cerisy-la-Forêt, Lessay, and Saint-Georges-de-Boscherville, the aisle apses are finished square externally, as at Lincoln, and also at St. Albans, Durham, and Peterborough.²

As an index of the general scale of Lincoln, as compared with these churches, we may take the internal width of the main spans, and the total internal width including the aisles.

The internal widths of the main spans at Lincoln, as ascertained, were about 29 ft. 6 in. for the choir,³ 28 ft. 9 in. for the north transept, and 28 ft. 9 in. as given by what remains above the floor at the west end of the nave. This width indicates a scale greater than that of Bernay (26 ft.), Montivilliers (choir, 27 ft.), or the later church of Lessay (choir, 24 ft. 6 in.); but it is much the same as Mont-Saint-Michel (nave, 28 ft.), Saint-Nicolas, Caen (27 ft. 11 in.), Saint-Georges-de-Boscherville (choir, 28 ft. 3 in.), and St. Augustine, Canterbury (choir crypt, 29 ft. 3 in.). It was less than Jumièges (choir, 31 ft. 2 in.), Westminster (choir, 31 ft. 2 in.), Canterbury cathedral (about 31 ft.),⁴ Cerisy (nave, 31 ft. 5 in.), and Saint-Étienne, Caen (nave, 32 ft. 10 in.). This last width was exceeded in some of the greater English churches, such as Winchester and Peterborough.

The total internal width of Lincoln, including the aisles, was about 65 ft. for the choir,⁵ and 66 ft. 5 in. for the nave. This again was greater than the scale of Bernay (choir, 58 ft. 6 in.; nave, 62 ft. 4 in.), Mont-Saint-Michel (nave, 57 ft. 9 in.), Montivilliers (choir, 57 ft. 6 in.), Saint-Nicolas, Caen (about 60 ft.), Saint-Georges-de-Boscherville (choir, 63 ft.), or Lessay (choir, 56 ft. 9 in.); but it was much the same as Jumièges (nave, 66 ft. 6 in.), and St. Augustine, Canterbury (choir crypt, 66 ft. 3 in.), though less than Saint-Étienne, Caen (nave, 73 ft. 6 in.),

¹ In the *Archaeological Journal*, liii. 10, I stated (following the published plans) that the choir aisles of Bernay finished square, both externally and internally. This is a mistake. In August, 1910, I had the pleasure of collaborating with M. le Chanoine Porée in the excavation of the end of the south choir aisle, which was found to be apsidal both externally and internally. My plan will be published in a forthcoming number of the *Bulletin Monumental*.

² Plans of all these east ends (except, of course, Lincoln) are illustrated in my paper in the *Archaeological Journal*, liii. 17, pl. iii. I may take this opportunity of correcting another mistake in this paper. The plans of Cerisy-la-Forêt and Lessay show the ends of the choir aisles as they now exist, but there can be no doubt that both have been altered from their original form, which was apsidal internally.

³ This slight excess of the width of the choir over that of the transept and nave was probably due to something in the architectural disposition of the side walls of the choir. At Cerisy the choir is 2 ft. wider than the nave, but this is due to the arcaded treatment of the side walls of the choir (see *Congrès de Caen*, pl. opp. p. 566). The remains at Lincoln, however, do not suggest this particular arrangement.

⁴ St. Albans also had a width of about 31 ft.

⁵ This is based on the ascertained width of the north choir aisle.

Cerisy (nave, 72 ft. 2 in.), or Canterbury Cathedral (72 ft.¹). Some comparisons of other dimensions are added below.

In working out the plan of Lincoln from what has been found, I have taken the standard thickness of wall as 4 ft. 9 in. This is the thickness of the north wall of the north transept. The wall of the north choir aisle is 4 ft. 8½ in. thick, and the width of the pilaster buttress next its eastern angle is 4 ft. 10 in. The width of the pilaster buttress next the eastern angle of the north wall of the north transept is 4 ft. 8 in., and the thickness (north to south) of the pier which supported the gallery of the north transept is from 4 ft. 6½ in. to 4 ft. 7½ in. We shall see, too, that this thickness is confirmed for the piers of the nave arcade by the thickness of the continuous foundation wall which connects the southern piers of the crossing. The thickness (north to south) of the nave piers of Saint-Étienne, Caen, is 4 ft. 8-9 in.

I will now begin the description of the reconstituted plan at its east end. The contraction of the width of the choir to that of the apse was effected by a single shaft on each side, which would receive an arch of a single order, the soffit of which was extended eastward as a narrow strip of barrel vault to an arch of two orders received by two shafts on each side at the opening of the apse itself, which latter would be covered with a semi-dome.² This is precisely the arrangement which still exists complete at Saint-Nicolas, Caen,³ and Saint-Georges-de-Boscherville,⁴ both of which retain their original groined vaults over the choir itself.⁵ Cerisy⁶ and Montivilliers are the same, except that they have only two single shafts, widely spaced in the same fashion, and at Lessay the apse opens from the choir by an arch of two orders, each received by a single shaft.

At Lincoln, the semicircular curve of the apse was struck from a centre on the line of the external face of the east end of the choir aisles. The apse itself was divided into five bays, as at Montivilliers, Saint-Nicolas, Caen, Cerisy, Lessay, and Saint-Georges-de-Boscherville.⁷ The bays seem to have been

¹ According to Professor Willis (*op. cit.*, p. 65).

² The choir roof would doubtless finish eastward with a gable over the arch opening into the apse, and the roof of the apse itself would abut against this gable at a lower level, as at Cerisy, Lessay, and Saint-Georges-de-Boscherville.

³ Pugin and Le Keux, *Specimens of the Architectural Antiquities of Normandy* (London, 1827), pls. xviii, xix.

⁴ A. Besnard, *op. cit.*, p. 58 (coupe longitudinale).

⁵ At Saint-Georges-de-Boscherville the apse is covered with a ribbed semi-dome.

⁶ At Cerisy there is a second shaft to the west, but this receives the arch of the triforium arcade of the straight bays of the choir (*Congrès de Caen*, elevation opp. p. 566).

⁷ So also at St. Albans (according to Buckler's plan) and Peterborough. So also in the ambulatory plans of Winchester and Norwich.

divided equally, centre to centre, from the external face of the east end of the choir aisles.¹ The thickness of the wall of the apse (7 ft. 4 in.) indicates that the wall was probably arcaded externally between the buttresses, and that it was arcaded internally over the lower windows with a single arch in each bay,² carrying a clearstory with a wall-passage, as at Saint-Nicolas, Caen,³ and Saint-Georges-de-Boscherville,⁴ and, as regards the internal arcade, at Cerisy⁵ and (in a less marked degree) at Lessay.

The choir was about 41 ft. in length,⁶ from the eastern side of the eastern piers of the crossing to the western shaft of the opening into the apse. The remaining foundation of a wall-shaft at H, J (pl. LXXV) proves that this length was divided into three bays. Two bays was the usual number in the earlier churches, as in the later churches, in Normandy itself—as at Bernay, Jumièges, Saint-Nicolas, Caen, Cerisy, Lessay, Saint-Georges-de-Boscherville, and in the Confessor's, Westminster. The choir of Montivilliers alone, like Lincoln, had three bays, though Bouet describes some indications which led him to believe that the choir of Saint-Étienne, Caen, had three bays.⁷ The choir of Lincoln, therefore, was an example of the greatest length (as regards number of bays) then adopted in Normandy, so far as we know, though it was soon exceeded by the four bays of the choirs of St. Albans, Durham, and Peterborough, and of the ambulatory plans of Winchester and Norwich—examples of the great expansion of plan which is so characteristic of the greater churches built in England after the Conquest.

If the width of the eastern bay of the choir, as determined by the existing remains, be repeated for the middle bay, the centre of the second wall-shaft is precisely in line with the centre of the wall of the transept aisle. The westernmost bay of the choir, next the crossing, was about 2 ft. wider than the two other bays, its width being governed by the width of the transept aisle.

The existing foundations at H, J, and M (pl. LXXV) indicate that the bays of the choir were divided by wall-shafts, which probably consisted of a broad

¹ The apse of Cerisy seems to have been set out in this manner.

² The standard thickness of 4 ft. 9 in., the depth of an external wall-arcade, and the depth of the internal arcade of Cerisy, make up the actual foundation thickness of 7 ft. 4 in. of the Lincoln apse.

³ Pugin and Le Keux, *op. cit.*, pls. xviii, xix.

⁴ A. Besnard, *op. cit.*, pls. opp. pp. 58 and 66.

⁵ Photograph in *Congrès de Caen*, opp. p. 570.

⁶ This is about 1 ft. more than the length of the choir of Cerisy, which has only two bays, the bay-width at Lincoln being much less.

⁷ G. Bouet, *op. cit.*, p. 18. The place indicated is now inaccessible without removing the roof covering, but Bouet's record of facts (from which it is sometimes necessary to distinguish his theories) is so accurate in respect of this church that his statement may be accepted for the present, in place of the current surmise that the choir of Saint-Étienne was only two bays in length.

pilaster with a half-shaft on its face, as in the choirs of Bernay, Jumièges, and Westminster, and to the alternate piers of the nave of Saint-Étienne, Caen. These wall-shafts of the Norman school have often been explained either as simply decorative, or as intended to support the tie-beams of the roof,¹ but in my view the origin of the idea must be connected with the intention to provide a support for an arch of some kind, and such shafts actually receive the transverse arches of original groined vaults in the choirs of Saint-Nicolas, Caen, and Saint-Georges-de-Boscherville.² It is more than probable that the choir of Lincoln was either actually vaulted in this manner, or at any rate that it was intended to be.

The existing remains are consistent with the supposition that the choir was separated from the aisles, not by an arcade, but by solid walls, as at Cerisy and St. Albans, and probably at Westminster.³ This, however, is not absolutely certain, for both faces of the foundation wall found between the south-east and south-west piers of the crossing (at j', pl. LXXV) are also of axed ashlar, and obviously this wall cannot have been carried above the floor level.

The choir aisles extended as far eastward as the springing of the great apse, and were finished square externally, and with apses of a little less than a semi-circle internally. The square external face is exactly in line with the centre of the curve of the great apse, and the springing of the internal apse is in line with the westernmost recession from the choir into the great apse. The square set-in from which the actual curve of the internal apse springs indicates a shaft on either side to receive the arch opening into the apse. At the east end of the lateral wall is a pilaster buttress of double projection, and on the east face of this angle there was probably a pilaster buttress of single projection.⁴ Assuming the standard thickness of 4 ft. 9 in. for the choir wall, the internal width of the choir aisle was about 13 ft.

The transept does not show the great development of length exemplified but little later at Winchester, and followed in the later great English churches. From the remains of the north arm, the extreme internal length works out to 122 ft. 9 in., which corresponds with that of the larger of our Normandy examples, and is almost exactly the length of the transept of Jumièges.⁵ At Bernay the

¹ This explanation is favoured by many French archaeologists. See, for example, R. Martin du Gard, *L'abbaye de Jumièges*, p. 109 seq. Cf. R. de Lasteyrie, *L'église de Saint-Philbert-de-Grandlieu* (*Mémoires de l'Académie des Inscriptions et Belles-Lettres*, xxxviii), p. 69.

² There is some evidence that the builders of the nave of Saint-Étienne, Caen, thought of a groined vault over the double bay, though the intention was abandoned.

³ *Archaeologia*, lxii. 98.

⁴ So at Saint-Nicolas, Caen.

⁵ Mr. Arthur G. Wallace gives me the internal length of the transept of Jumièges as 123 ft. 1 in.

length is 104 ft. 6 in.; at Sainte-Trinité and Saint-Nicolas, Caen, and at Lessay it does not reach 100 ft.; while at Saint-Georges-de-Boscherville it is only 103 ft. At Cerisy the length is much the same as at Lincoln; at Saint-Étienne, Caen, it is 124 ft. 6 in.;¹ at Canterbury (according to Professor Willis²) about 127 ft.; and at Mont-Saint-Michel 128 ft. According to my plan, the internal length of the north transept of Lincoln, to the north side of the crossing, works out to 42 ft., which is 1 ft. more than the length of the choir to the westernmost break of the opening into the apse.³

The northern end of the north transept was divided externally into two bays by a central pilaster buttress of double projection, this arrangement being dictated by the internal gallery and its vaults. The same division of the transept end by a central buttress is found at Jumièges, Mont-Saint-Michel, Saint-Étienne, Sainte-Trinité, and Saint-Nicolas, Caen, Lessay, and Saint-Georges-de-Boscherville; as also at Winchester, Ely, St. Albans, Chichester, Romsey, and Southwell. A small point in the plan of these buttresses is worth notice: the projection of the inner pilaster, next the wall, is less than that of the outer pilaster, and this is also the case in the buttresses at the north end of the north transept of Saint-Étienne, Caen.

The great square projection at the north-west angle of the north transept, to enclose the staircase, is unusual, for the stair in this position is generally included in the thickness of the wall reinforced by pilaster buttresses on each side of the angle.

One of the most interesting points in the transept plan of Lincoln is the disposition of its eastern side. All the Normandy plans which I have quoted as typical show a single apsidal chapel on the east side of each arm. At Lincoln this chapel takes the form of a rectangular aisle. It retains, however, something of the character of the apsidal plan, for its north end stops 4 ft. 6 in. (internally) short of the north end of the transept itself. The fact that the north jamb of the opening from the transept to the aisle (D', pl. LXXV) is in line with the inside of the north wall of the aisle indicates that there was probably a wide-soffited arch here,⁴ with an inner order received by a single shaft, as to the corresponding opening at Saint-Étienne, Caen.⁵ The aisle itself was about 13 ft. in width in-

¹ Professor Willis (*op. cit.*, 65) gives the transept length as 127 ft. As this did not agree with my own measurements (which were not taken specially for this purpose), M. Ferdinand Huard, the Caen architect, has very kindly taken this and some other measurements of Saint-Étienne purposely for me.

² *Op. cit.*, 65.

³ At Cerisy (according to the plan in Ruprich-Robert, *L'architecture normande*, pl. liv, fig. 7) the lengths of the transept arms are about the same as the length of the choir to the corresponding point.

⁴ This arch would, of course, be immediately under the vault of the gallery.

⁵ At Caen this opening is 14 ft. 9 in. wide; at Lincoln it is 15 ft. 5 in. wide.

ternally, which is also the width of the choir aisle. My plan shows a solid wall between the south end of the aisle and the choir aisle, as in the plans with transept apses, but nothing was found to indicate whether there was a solid wall or an arched opening here.¹

Aisles on each side of the transept still exist in the church of Saint-Remi, Reims, where the transept was begun about 1039,² and, according to the investigations of M. Lefèvre-Pontalis, they were part of the plan of the cathedral of Orléans as built after a fire of 989.³ The aisles on each side of the transept are found at Winchester and Ely, and on the east side only at Durham and Peterborough, but, so far as we know at present, Lincoln is the earliest example of an aisled transept in the Norman school.

The ground story of the transept was covered by the great gallery which is so characteristic of the Norman churches.⁴ The plan, as proved by what has been found, shows marked analogies with that of Saint-Étienne, Caen, but, owing to the narrower span of the transept at Lincoln, and its greater projection beyond the walls of the aisles, the bays of the gallery vault were much more oblong than at Caen.⁵ The central pier was considerably larger than that at Caen, though its component members were probably similar. The ashlar-faced foundation wall (J', pl. LXXV) found between the southern piers of the crossing may possibly indicate (though this is not absolutely certain) that the gallery extended over the whole area of each arm, up to the north and south piers of the crossing, as at Jumièges

¹ The continuation of the inner face of the choir aisle wall at Q in relation to the angle of the pier at the west end of this aisle, found at F' (plate LXXV), indicates a projection for this pier which is not enough for the three shafts which are found in this position, and also on the backs of the crossing piers, at Saint-Étienne, Caen. Following this indication, I have shown all these piers (plate LXXVII) with two shafts only, without the central shaft.

² L. Demaison, *Date de l'église de Saint-Remi de Reims* in *Travaux de l'Académie de Reims*, lxxi. (1883) 298-308.

³ E. Lefèvre-Pontalis and E. Jarry, *La cathédrale romane d'Orléans*, in the *Bulletin Monumental*, lxxviii. 372.

⁴ Jumièges, Bayeux, Saint-Étienne and Saint-Nicolas, Caen, Cerisy, Saint-Georges-de-Boscher-ville, Canterbury, Winchester, and Ely.

⁵ The plan can only be interpreted in this manner, though it may be objected that the vaulting of such excessively oblong bays would present serious difficulty. The difficulty was met in many of these early unribbed vaults by the employment of a low segmental curve for the arches of longer span, while the shorter spans were covered by semicircular arches, perhaps stilted. The segmental curve for the arch from north to south under this gallery at Lincoln, developed in this manner, would indeed be very low, but it would be very little lower than that of some of the arches in the central crypt of Winchester Cathedral, and not so low as the curve of the upper part of the outer arch between the ambulatory and the eastern chapel of this crypt; and the curve would be very similar to that of the diagonal ribs of the vaults of the choir aisles of Durham (for these, see *Journal of the Royal Institute of British Architects*, 3rd ser., vi. 298, fig. 10).

and originally at Bayeux, and my plan suggests cylindrical piers¹ to receive the arcade under the front of the gallery between the crossing piers. The shaft on the inner face of the gallery pier G' (pl. LXXV) seems to indicate an extension of the gallery vault towards the crossing, but this shaft also occurs at Saint-Étienne, Caen, where the gallery finishes in line with the aisle walls, and the shaft runs up the front of the gallery and carries nothing. The presence of this shaft at Caen, however, would be readily explained if the original intention there was to extend the gallery up to the crossing,² which may very well have been the case, considering the earlier examples of Jumièges, and of Odo's cathedral of Bayeux which was dedicated in 1077.³ On the whole, the gallery over the whole transept arm would seem to be most probable for Lincoln.⁴

The thickness of the foundation wall found at J' (pl. LXXV) between the southern piers of the crossing, which is 5 ft. 1¼ in., compared with the standard thickness of 4 ft. 9 in., suggests that the crossing piers were a little thicker than the piers of the nave arcades, and this is precisely the case at Saint-Étienne, Caen.⁵

The nave of Lincoln was ten bays in length, excluding the bay between the western towers. It is, therefore, an example of that expansion of plan of which I have already spoken. The nave of Bernay (originally) had seven bays, as later at Mont-Saint-Michel, Saint Nicolas, Caen, and Lessay. The naves of Jumièges, Saint-Étienne, Caen, Cerisy, and Saint-Georges-de-Boscherville have eight bays, and although Sainte-Trinité, Caen, has a nave of nine bays, the bays are of less width and the total length less than at Saint-Étienne. Lincoln, however, considerably exceeded Saint-Étienne in the length of its nave, as in the number of bays.⁶

The internal width of the aisles of the nave was about 14 ft. 1 in., i. e. about 1 ft. more than the width of the aisles of the choir and transept.

¹ As at Saint-Georges-de-Boscherville. At Winchester the cylindrical piers have a pilaster and half-shaft on the back to receive the aisle vault. In both these cases, the gallery only extends over the extreme bay of each arm of the transept.

² The shaft which rises from the abacus of the gallery pier at Winchester, and stops abruptly at the gallery floor, cannot be explained in this manner, and it would seem to be merely decorative.

³ *Congrès de Caen*, pp. 145 and 154.

⁴ Mr. C. R. Peers has found evidence that at Christchurch (Hampshire) the transept galleries extended up to the crossing piers. His account of this church will be found in the forthcoming vol. v for Hampshire in the *Victoria County History*.

⁵ The thickness of the wall at the arcade piers of the nave of Saint-Étienne, Caen, is (as stated above) 4 ft. 8-9 in., and the thickness at the crossing piers is about 5 ft. 2 in.

⁶ The total internal length of eleventh-century Lincoln, from the inner face of the apse to the inside of the west wall (actually measured to the back of the fourteenth-century wall-arcade on the west wall), was about 310 ft. The total external length, from the outer face of the apse to the outer face of the west front, was about 334 ft. 4 in.

As to the spacing of the nave bays, from my setting out it would seem that the eastern bay, next the crossing, was narrower than the others¹ by something less than a foot. At Saint-Étienne, Caen, the width of the eastern bay is about 1 ft. less than that of the second bay. The reason in both cases would be the same, viz. that in setting out sufficient length was not allowed for the greater width of the crossing piers and eastern responds. At Lincoln the second bay also is 5 in. narrower than the succeeding bays westward, but this arises from the length having been set out along the aisle, where the wall-pier between the first and second bays is of less width than the others westward, for the interspaces between these wall-piers are equal to within an inch in the second and third bays.

The width of the easternmost wall-pier of the north aisle suggests a pilaster with a half-shaft on its face, as in the choir. Westward the wall-piers are considerably wider.² Their width, 4 ft. 3 in., and projection, 2 ft., exactly suit such a pier as those of the nave aisles of Saint-Étienne, Caen, which consist of a half-shaft on the face of a pilaster, which receives the transverse arch, and a half-shaft on either side which receives the projecting springing of the groin, of the aisle vault. This gives us also the form of the piers of the main arcades on the side next the aisle. The form of the remainder of the pier is suggested by the two single stones of shafts which were found re-used in the foundation at D'', near the western respond of the present north arcade of the nave. The diameters of these two shafts are almost precisely those of the larger and smaller shafts which receive the arcade arches in the nave piers of Saint-Étienne, Caen, and we may therefore conclude that the Lincoln piers had the same plan.³

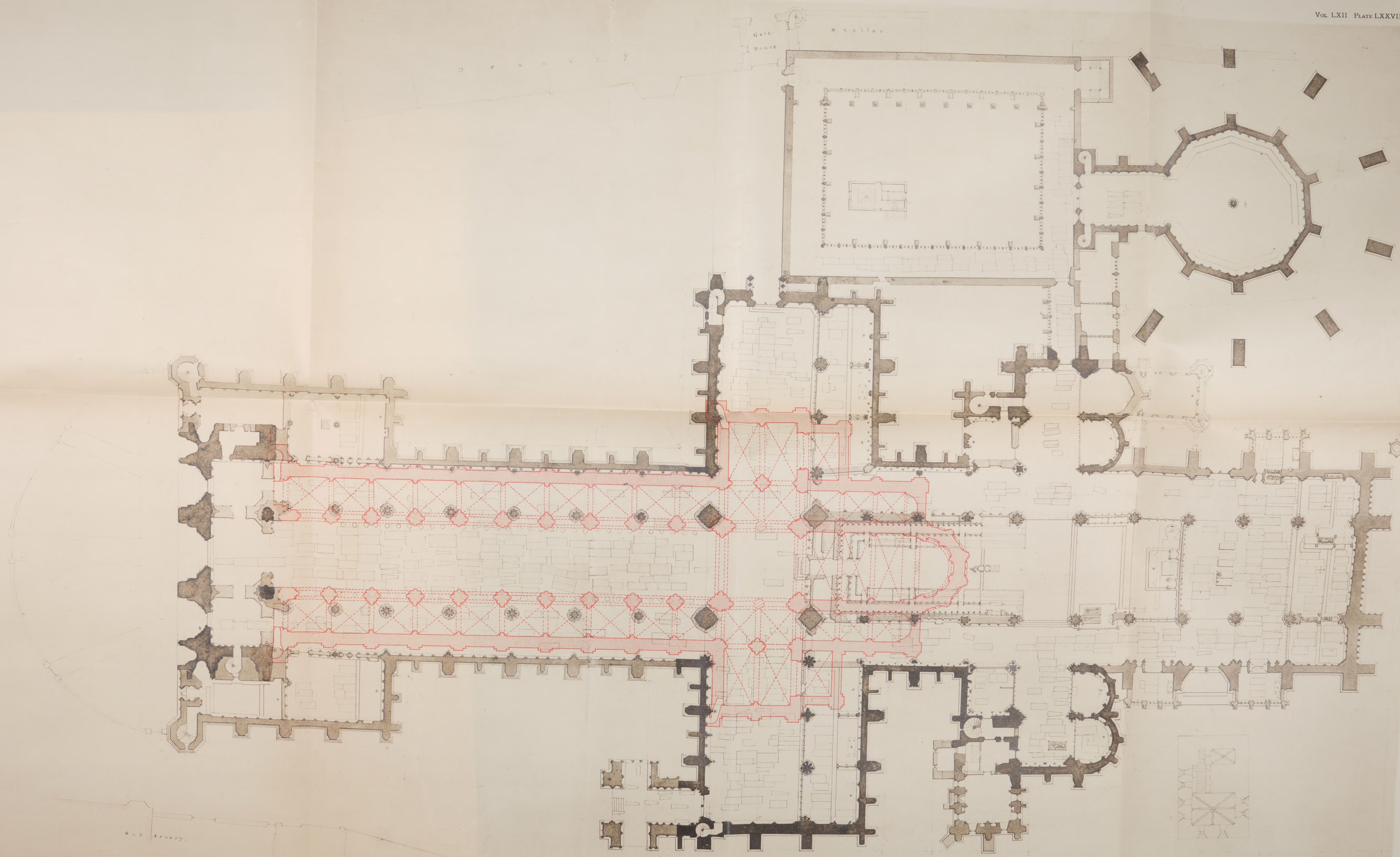
The remains found in the north aisle give a bay-width of 18 ft. 4 in., from centre to centre of piers, for the third bay from the crossing, and of 18 ft. 4½ in. for the eighth bay; the intervening length (not excavated) works out to an average of 18 ft. 5½ in. each for the fourth, fifth, sixth, and seventh bays. In the ninth bay (second from west end) on the north side, the interspace between the wall-piers is 12 ft. 10½ in., which, if the wall-pier to the west was of the same width as those eastward, would give a width, centre to centre, of 17 ft. 1½ in., and may indicate that the width of the two western bays was less than that of the other bays eastward.⁴ On the other hand, on the south side the side of the wall-pier w' (pl.

¹ i.e. the third to the eighth bay, inclusive.

² This point, one bay west of the crossing, is a likely place for a slight change of this kind.

³ They are so drawn on my plan, except as regards the wall-shafts next the nave, which at Caen are alternately simple half-shafts, and half-shafts on the face of pilasters. For the plan of the Caen piers, see *Journal of the Royal Institute of British Architects*, 3rd ser., vi. 291, fig. 2, iv.

⁴ The two westernmost bays of the present nave are narrower than those eastward, but the difference is very much greater than that indicated by the second bay on the north side for the eleventh-century work.



10 0 10 20 30 40 50 60 70 80 90 100 200 FEET
10 5 0 10 20 30 40 50 MÈTRES

PLAN OF LINCOLN CATHEDRAL BY E. J. WILLSON, F.S.A.
To which is added in red a plan of the first church as developed from the existing remains shown on
plates LXXV and LXXVI, by John Bilson, F.S.A.
Published by the Society of Antiquaries of London, 1911

LXXVI) seems to be about 1 ft. 2 in. further west than the side of the wall-pier *u'* on the north aisle wall, which seems to indicate that the second bay from the west on the south side was of the same width as the other bays eastward. Nothing remains, either in the work which has survived above floor-level, or in what was found in the excavations, to indicate the precise width of the western bay on either side, but it may be noted that the continuation of the normal spacing of the nave bays through the two western bays would extend almost exactly as far west as the line of the back of the thirteenth-century wall-arcades on the west side of the Morning Chapel and of the Consistory Court respectively. How the eastern sides of the towers were finished towards the nave aisles, we can only guess now, for all traces of the original plan have been obliterated by the successive alterations which this part of the church has undergone. It would seem to be certain, however, that there was originally some massive thickening of the tower works on this side, corresponding to some extent with those on their west faces, and on their north and south faces respectively. This is indicated by the masses of masonry on the inner (or nave) sides of the two western respond piers of the present nave arcades, and the much larger masses between the west side of the Morning Chapel and of the Consistory Court and the forework on the north face of the northern tower, and that on the south face of the southern tower; and some considerable buttressing on the east side of these great towers would in any case have to be provided. The west ends of the aisles as shown on my plan are pure conjecture, and are merely intended to illustrate a possible arrangement.¹ The centre line of the larger shafts to the suggested recesses at the ends of the aisles is set out on the basis of the continuation westward of the normal spacing of the nave bays. The staircases suggested where the west ends of the aisle walls abut against the towers occur in this position at Saint-Étienne, Caen, and at Bayeux.²

A study of the western part of the eleventh-century church which still remains above ground, which cannot be attempted here, would show how much can be learned from it of the architecture of the nave of which it formed so noble a termination. One interesting point, however, may be noticed. The outer faces of the main walls of the nave are indicated on the west front by the lines of the southern jamb of the great northern lateral recess, and by the northern jamb of the corresponding southern recess.³

¹ I have been obliged to ignore the foundations found at *y'*, *z'*, of which I frankly confess I cannot offer any satisfactory explanation.

² See the plans in Pugin and Le Keux, *op. cit.*, pls. vii and xxiv.

³ The exact width between the lines of these two jambs on the west front is 38 ft. 7½ in. The width of the nave, as indicated by the existing remains on either side of the bay between the towers,

564 PLAN OF FIRST CATHEDRAL CHURCH OF LINCOLN

The plan of Bishop Remi's church, as worked out from the remains which have been found, is an admirable illustration of the logical precision, clearly defined structural organization, and feeling for monumental form which characterize the best work of the Norman school. It conforms very closely to the 'type' of the contemporary works of the continental school of Normandy, much more closely than do most of the great churches built in England after the Norman Conquest. It shows some indications, though as yet but slight, of the great expansion of scale which is illustrated in the nearly contemporary church of Winchester, and it is an important landmark between the plans of the earlier Norman churches and such a completely developed plan as that of Durham. And its western work stands almost alone as a magnificently original piece of monumental building, a speaking witness of the powerful architectural expression of a masterful race.

was 28 ft. 9 in.; adding to this two walls of the assumed thickness of 4 ft. 9 in. each, we have a total width to the outside of the nave walls of 38 ft. 3 in.

XXVI.—*A Late-Celtic and Romano-British Cave-dwelling at Wookey-Hole, near Wells, Somerset.* By H. E. BALCH, *Esq.*, and R. D. R. TROUP, *Esq.*

Read 23rd March, 1911.

THE great cavern of Wookey-Hole is situated two miles to the north-west of the city of Wells, in the centre of Somerset, and immediately adjacent to the thriving village which has taken the name of the cavern, and has depended for its prosperity on the existence of the copious and usually pellucid stream, which here bursts forth from Mendip's hidden reservoirs. This is the source of the Axe, which winds its way through the lower lands, and after uniting with the sister stream of Cheddar, flows into the sea near Weston-super-mare. From Wookey-Hole the southern slope of Mendip rises in an unbroken sweep till it reaches a thousand feet above the sea, commanding a magnificent view to the east, south, and west. It is not a limestone cave in the ordinary sense of the word, since every known cavity in the immediate vicinity is not in the Carboniferous Limestone, but in the Dolomitic Conglomerate, which here attains enormous thickness. To the north, the great mass of Carboniferous Limestone, receiving the water of innumerable springs from the Old Red Sandstone and Shales and from a generous rainfall, engulfs it in a countless number of swallets, many of which are insignificant, whilst some of the larger have been opened by our exploring parties during the past few years, and followed through unimagined beauties to profound depths.

It seems that a pre-Triassic cave-gorge has become filled up entirely with débris, thus blocking an ancient outlet; and, on subsequent re-elevation, the stream from the Limestone has worn its way through the impeding mass, and is again in course of forming a cavern ravine along practically the same line. The plan and projected section (fig. 1) give an idea of the form and extent of the cavern generally, so far as we have yet found passable ways. It consists principally of three great chambers on the river level, whilst, at the point indicated at the north end, there is a fourth not accessible under ordinary conditions. Above is a series of passages and chambers, representing ancient stream-levels, and affording abundant evidences of river action. Though of course these are merged at certain points, there are five definite levels of outlet readily traceable, with an obvious increase in size as they descend.

Our knowledge of most of the higher levels of the cavern is limited to that

part lying between the entrance and the first great chamber, and efforts to trace them beyond this point have hitherto taken us away from the present line of the river. In the beautiful stalactite chambers found in 1902, we have discovered a very early water channel running in from the north-west, and on its floor a deposit of upwards of a foot of clean coarse sand, over which lies a thick pavement of hard and compact stalagmite. Through this we hope with great labour to break a way, but the process is a lengthy one, and the necessity for safeguarding the stalactite prevents anything like violent methods of removal.

Everywhere, from the highest to the lowest levels in the cavern, there are deposits of sand of varying degrees of fineness. In the river chambers each flood picks up a certain proportion of the previous deposit, and precipitates another in its place. The existence on the hills at Priddy, three miles away, of extensive workings for lead, has had no inconsiderable effect upon the amount of sediment borne down by the river. This cause has been in operation for at least two thousand years, as there is abundant evidence that, in Celtic and Roman times, washing for lead was carried on wherever water was available on the Mendips above. Whatever method of washing has been in operation through all these centuries, in every case a considerable amount of the finer material has passed away to the swallets, sometimes entirely choking and concealing them, as was shown at St. Cuthbert's Lead Works in 1908, when the removal of seventeen feet of deposit exposed an original swallet in the bottom of the valley. Near the base of this deposit, too, was found in the same year the skeleton of a woman, with plaited tresses of hair intact, and with it were four decorated glass beads of Celtic type. The beads were sent to Prof. Boyd Dawkins by the company's officials in London, to whom they were returned, and are now, in consequence of the closing of the works, in danger of being lost to sight. A similar bead occurred in the Celtic deposit at Wookey-Hole, where also have been found from time to time traces of crude open-hearth smelting, such as was then in vogue on the Mendips.

When we consider the abundance of remains of Roman times in the county, and the existence of camps and earthworks which were certainly pre-Roman, the wonder is not that plentiful remains have been found in the cavern, but rather that they have escaped the attention of archaeologists for so long. On every side abound these evidences: at Masbury, Dolberrow, Banwell, and elsewhere, there are British camps, most of which were later used by the Romans. At Shepton Mallet, and at Cheddar, there have been found many relics of domestic life of the Roman period, whilst at Priddy and at Charterhouse, where extensive mining took place, in recent years numerous ornaments, utensils, coins, and occasional pigs of lead have been found. Our superficial deposits have yielded post-Roman material. Beneath, but near the surface, follows the Roman

layer, whence without a break we pass into the Celtic débris. Little more than a stone's throw from the cave, neolithic remains abound,¹ while across the valley is the famous Hyaena Den, excavated and described by Prof. Boyd Dawkins, where abundant proofs of palaeolithic occupation were laid bare.

To any one standing in the bottom of the valley, the entrance to the cavern is not at first apparent, and before the cutting of the present path, the ascent to the elevated entrance must have presented formidable obstacles, and rendered it impregnable if held by resolute defenders. From above, and from either side, the cavern was still less approachable, and it is clear that with a store of food in the cavern, and with an unfailing water supply, this retreat must have been the chief stronghold of the district. Except for a superficial deposit of soil, leaves, and rubbish, the cavern is in the same condition as when it was vacated about A.D. 390. Not a rock of any importance has fallen, not one has been removed from the floor. Those upon which we now rest our tools were evidently used for a similar purpose two thousand years ago. Our researches indicate that the occupied portion extended for a distance of 90 ft. inwards from the present doorway, and of this little more than 30 ft. was lit by daylight. Beyond the inhabited part, however, occurs a considerable quantity of broken pottery, with coins. This is at the bottom of 'Hell ladder', a distance of 150 ft. from the entrance, and we have also many fragments from amongst the boulders lying to the east of this point.

The inhabited part was a roomy passage, with an average width of 10 ft., and singularly free from drip; from the general absence of stalagmite it is clear that this has always been the case, and the place was favoured in other ways as a habitation for man. One of its most striking features is the singular configuration of the upper passages, which enabled the smoke to escape without causing inconvenience. This was due to the fact that the upper passages, into which the smoke could readily pass, had each its independent outlet in the face of the cliff; thus circulation was set up, and, as our experiments show, the entrance gallery remained free from smoke. On several occasions with fires in the cave, we found that the atmosphere remained perfectly clear; and the smoke was seen pouring out from points high up above the entrance. The temperature of the cave, too, was far more equable than that without, affording cool shelter in summer, and comfortable warmth in winter. At a short distance from the entrance, there is never any variation, winter or summer, from a temperature of 50° F.

At this elevation above the river, there was no fear of sudden floods, even in the wettest weather; in fact, the inhabited part is remarkably dry after a very heavy rainfall. In only one limited portion have we found water-borne mud, and this occurred at the lowest part of the floor, and lay a foot in depth, directly upon

¹ The Report of the Wells Natural History and Archaeological Society for 1910 gives an account of these neolithic finds.

the Roman deposit, being crossed in its shallowest part, against the western wall, by three layers of stepping-stones. The accidental formation of this muddy pool may possibly have caused the abandonment of the cave, coming as it did quite in the centre of the living quarters. It is equally probable that the marauding bands which pillaged everywhere after the withdrawal of the Romans, were the sole cause of the abandonment. That there was a time in the remote past when

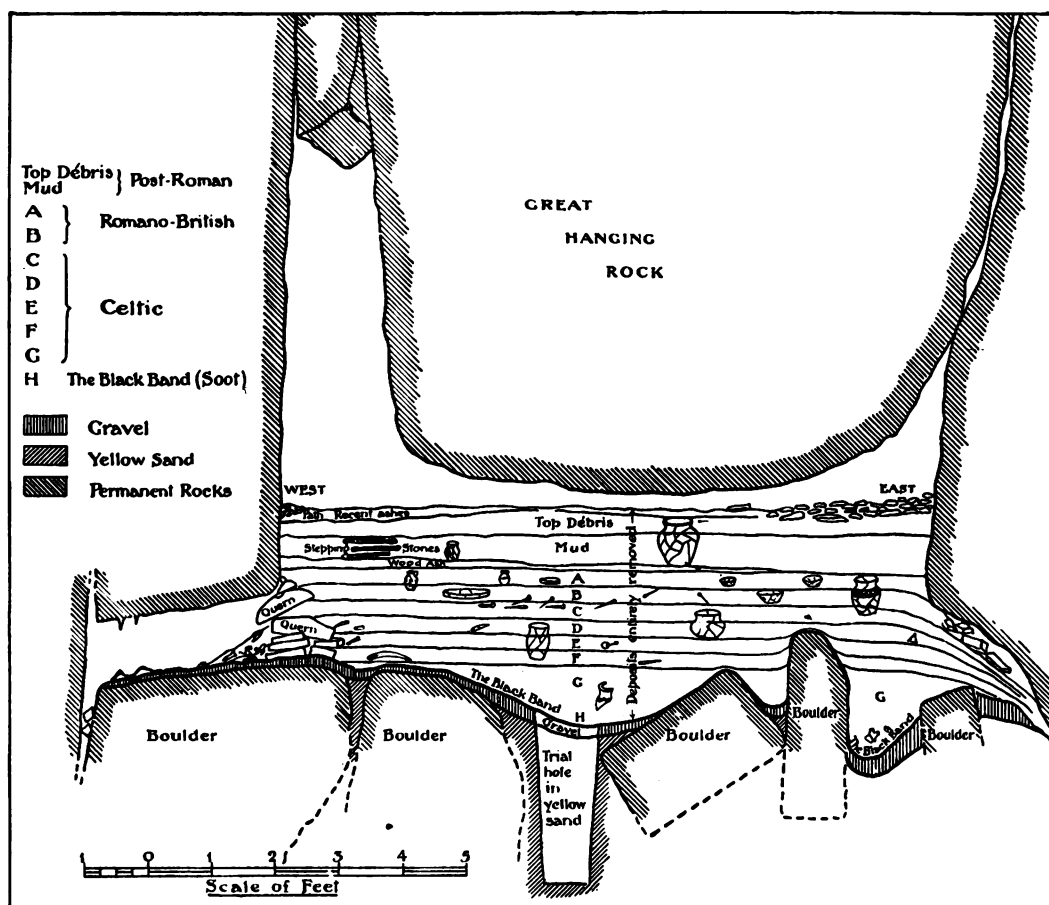


Fig. 2. Section across Celtic and Romano-British Deposit at 30 ft. from entrance.

the river floods reached even to this height, is manifest from the existence, beneath our excavations, of a considerable thickness of fine yellow sand, overlaid by a thin layer of black soot-like deposit, which soot follows every irregularity of the floor, rising even over boulders. It has been impossible to determine what lies below the sand (into which was sunk a trial hole, as shown in fig. 2), as we have had to deal with a great depth of material so as not to leave dangerous holes in the frequented passages, and we have therefore confined our work to the deposits lying above it.

With the ramifications of the passages which lead off from the main gallery,

the cavern appears to afford accommodation for unlimited storage against siege or famine, and without question it was put to such a purpose many times in the course of its chequered history. This may explain the existence in the remote passages of fragments of great vessels, which would be used to store foods, such for instance as grain, beans, peas, acorns, &c., all of which have occurred in our workings. The equable temperature of the place, and the comparatively dry atmosphere of the passages, must have facilitated such storage. Vast stores could have been accumulated and left unguarded, and yet have been practically safe from discovery by any chance trespasser. As will be seen later, we found in the course of our workings a key or latch-lifter, which may indicate that the entrance was protected by some kind of palisade, which would have added greatly to the strength of the defence.

One cannot but be struck by the enormous superiority in strength of this position when compared with the lake-villages, where the only protection was the surrounding water (which must have been passable to an enemy in time of severe frost) and the stockade. This is the obvious reason why the occupation of the lake-villages ceased when the Romans came, whilst that of the cavern persisted until the withdrawal of the legions, when the Cave people, unable longer to secure their crops and herds, followed their retreating Celtic relatives westwards into the fastnesses of Wales.

Before any systematic search began, we discovered human remains lying on the surface in a small passage immediately adjacent to the entrance, and running down steeply to the east inside the doorway. Here, at the base of a slope of débris, and 6 ft. below the level of the main passage, there lay a human jaw, the head of a femur, and some fragments of pottery. We then cut a section through what proved to be an accumulation of wood ashes, obviously refuse from occupation. There was no apparent stratification, as the whole had been precipitated down the slope as a talus, but there were clear indications that we had here remains of a long period, the close of which was Roman in character, as shown by the presence of Roman coins. We proceeded to prove the extent of the deposit by a series of small test holes, all of which without exception confirmed the importance of the find, and we further determined its extreme limits by search among the boulders in the more remote parts, before seeking authority to make a full exploration of the cave. Mr. W. S. Hodgkinson, with his invariable kindness, at once gave the necessary authority, and his tenant, Mr. George Adlam, with equal readiness, assisted us by every means in his power. We commenced work in the autumn of 1908 at the extreme inmost limit of the accumulation, intending to make a vertical cut from wall to wall of the cave so as to expose a complete section of the floor. We were surprised to find that the superficial material in the centre of the floor was only three inches in depth,

being largely composed of coal-ash, which had been laid from time to time by the tenant of the cave to improve the pathway. This formed a hard cake, and when it was removed we found that we had a depth reaching a maximum of six, but averaging three, inches of black material, consisting chiefly of pottery fragments, wood-ash, and earth, with various articles embedded. From the moment this was reached, the idea of laying bare a section was abandoned, as great boulders projected through the deposit. The intervening cavities were in many cases open, and contained, frequently at a considerable depth, detritus of various ages inextricably mingled, pieces of tobacco pipe sometimes lying alongside pottery of Roman age. Articles found under these conditions have been classed as indefinite, although in many cases their period is obvious. The floor itself

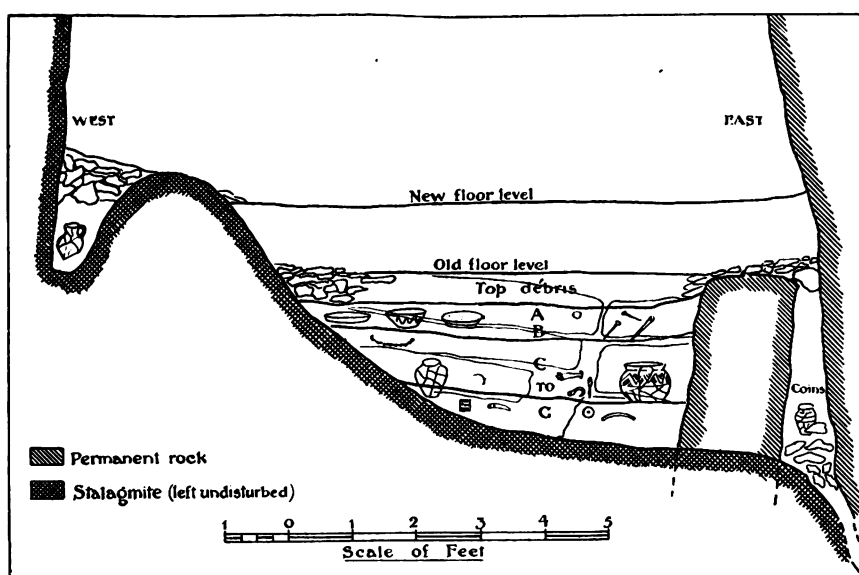


Fig. 3. Section across excavation at 60 ft. from entrance.

presented a fairly regular sequence, and we excavated it down to the stalagmite base which formed the original floor at 60 ft. from the doorway, this being the only spot in the dwelling which shows any stalagmite.

A diagram of the passage at this spot is shown in fig. 3, with the relative position of some of the finds. Of the further diagrams, fig. 4 shows the form of the place at 75 ft. from the entrance, and fig. 2 the point where exists the most perfect stratification yet found. We excavated a total depth of nearly four feet of accumulated material in cuts of three inches, till we came to the deep level marked G, in which remains occurred most sparsely. The top debris consisted of surface material blown, rolled, or dragged into the cave; beneath was a chocolate-coloured mud deposit, marking possibly some local wash-out of a fissure, and the formation of a pool. This contained only fragments of boiling-pot.

Beneath, and totalling only six inches, layers A and B represented the whole period of the Roman occupation of Britain. Here pottery and other remains abounded. In the diagram, which is to a certain extent projected, types of pottery are inserted in the various levels where they were found, and other articles are

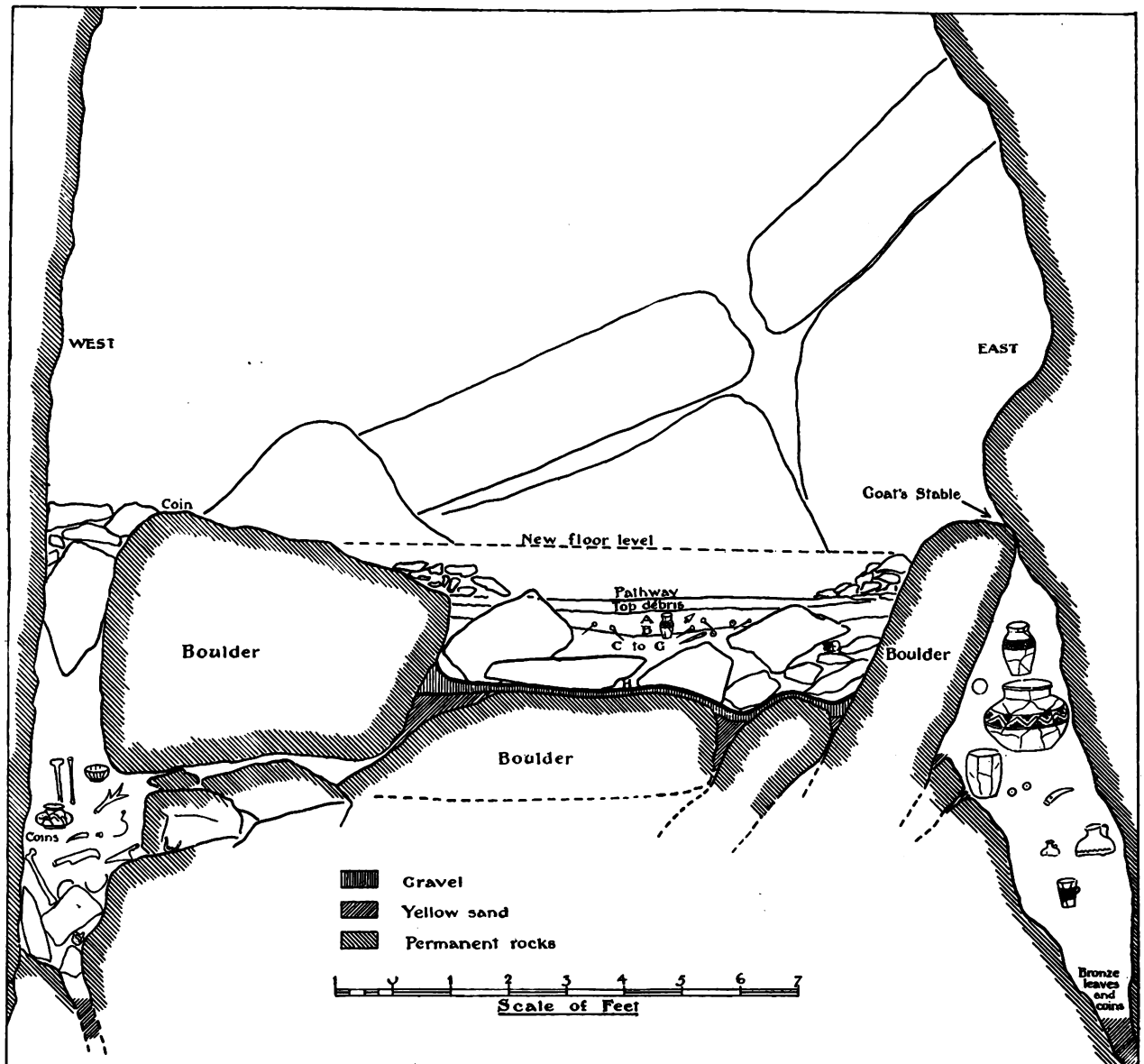


Fig. 4. Section across excavation 75 ft. from entrance.

similarly shown. A pair of large beehive querns are shown at the entrance of the small chamber on the left, in the position in which we found them. A detailed account of the finds is given in the succeeding pages. From first to last we have pursued the same method of investigation: limiting the excavation to a definite

line of deposit where such could be traced, and to a certain measurement where this was absent, we have removed as much earth as our box would hold to a raised board, upon which we have tipped it. Working principally with an acetylene lamp, we have then slowly searched through it with thin blades of wood, spreading each small portion on the board before us before discarding it. When we say that articles the size of small seeds, one-inch pins, and the like, have not escaped observation, it will be evident that we have obtained everything that the material contained. Our greatest difficulty has been the disposal of the refuse, which has hampered us at every turn. We have endeavoured to leave the place more accessible, and have for this purpose lowered the floor over a large area to the extent of several feet, raising it elsewhere to correspond. In the absence of dumping ground outside the cave, we have been compelled to contrive all sorts of tipping places, at the same time leaving no hideous disfigurements. Various expedients have had to be adopted to bridge over excavations in the pathway for visitors to the cave, and these have frequently doubled our work. It has been no uncommon experience to remove one or two small wedged stones in an apparently solid floor, thereby revealing a tempting fissure with loose earth and stones. Near the 'goat's stable', for instance, was a hole leading to a small chamber twelve feet below the level of the main gallery. This was first passed by Dr. E. A. Baker, and was subsequently searched by Mr. R. Balch; it yielded a spade and two bowls (the best preserved articles of wood yet discovered), two nearly complete urns, and several coins. Two other prolific but difficult fissures are seen in fig. 4.

It will be seen in fig. 2 that at the commencement of the Celtic period the inhabitants found the place in the form of a long and roomy passage or chamber, its floor consisting of coarse gravel with sand below, whilst great boulders projected here and there, forming in some cases convenient seats and tables. They found the entrance much overhung, providing a kind of natural ante-chamber open to the daylight and yet perfectly protected from the wind and rain. Further (fig. 3) they found a smooth floor of stalagmite sloping across the chamber, and passing across this they climbed over a mass of boulders with numberless interstices and hollows. Over the whole floor ran a thin layer of black sootlike material, a deposit which we think marks an earlier occupation, possibly corresponding with a similar though larger deposit found at Kent's Hole at Torquay, and proved to be of neolithic origin. It is evident that wood fires were continuously used from the first, probably never being allowed to go out, as throughout the lower layers an enormous deposit of grey ash occurs, with interspersed relics comparatively scarce. Great quantities of this ash gravitated into a cavity on the eastern side of the passage, forming one of our difficult slopes of detritus, and intermingling the deposits. The effect of this accumulation must

have been to level rapidly the irregularities of the floor, and to provide a much improved habitation, though many of the more distant fissures remained open to a much later date.

The abundance of iron nails, many of them clinched, suggests that even the earlier people used wood for domestic purposes. So far as the excavations have yet gone we have found no remains without accompanying objects of iron, and we therefore conclude that all our pottery and other finds, however crude, belong to the Early Iron Age. There are indications that iron smelting took place on the spot, as we have several specimens of hematite similar to that which occurs, and has been mined, little more than a mile from the cave. These occurred in levels D and F, whilst we also have a small lump of imperfectly smelted iron from level F, and a larger lump from level B. The condition of a large number of the articles of iron, more especially those of earlier date, indicates that the reduction was never very perfect, there being a kind of foliation which shows itself the more as oxidation advances. It would appear to have been hammered up from an imperfectly plastic condition. Some iron, however, was more probably imported into the cave in the form of currency-bars, of which we have portions



Fig. 5. Iron currency-bar, Wookey-Hole. $\frac{1}{2}$.

of three distinct specimens. They appear to have been looked upon not merely as currency, but as worked-up iron which could be readily turned into articles of daily use. In support of this we have a portion of a bucket handle, attached by a rivet to the broken rim, the handle agreeing most exactly with the smaller of our currency-bars. We have submitted our specimens to Mr. Reginald A. Smith, of the British Museum, whose work upon the subject¹ is well known, and he is of opinion that the smaller bar (fig. 5) is a quarter-unit specimen, a denomination hitherto unknown. It is barely half an inch in width and $\frac{3}{8}$ in. in thickness, and separated into two portions in getting out, these being $5\frac{1}{2}$ and $5\frac{3}{8}$ ins. long, and weighing 530 and 510 grains respectively, which gives a total length of $10\frac{7}{8}$ in. and a weight of 1,040 grains or 67.519 grammes. The recognized unit being 4,770 grains or 309.74 grammes, this specimen is 152 grains short of true quarter standard, a difference frequently exceeded in known higher-value bars. A point of some importance in this specimen, however, is the fact that the line of fracture between the two portions is square, and the length of the two pieces equal, so that it is practically certain that some incision had been made before the bar was lost in the floor débris. The other specimens are the handle end

¹ *Proceedings*, xx. 179; xxii. 338.

of a unit currency-bar and the basal portion of a half-unit bar, weighing respectively 846 and 750 grains, which, when multiplied up to average length, give results agreeing with the known standard.

DESCRIPTION OF THE FINDS.

Iron Weapons and Tools. As at Glastonbury, weapons of offence and the chase do not occur in abundance at any level of the excavation. An iron dagger and bronze pommel found in association, but not necessarily belonging together, accompanied Celtic pottery, implements, and parts of a human skeleton in the fissure shown near the west wall in fig. 4. The weapon is 5 in. in length and $1\frac{1}{4}$ in breadth at its widest part, unusually well finished, and capable of being wrought to a fine edge on any of the many hone-stones found. A further portion, with tang and bearing a rude trefoil as decoration, was found hard by, and has been figured as part of this weapon (pl. LXXVIII, fig. 16). The bronze pommel is a solid, bell-shaped knob, the end of which sinks into a hollow, out of which the centre rises as a cone. It shows what is probably a portion of the iron tang embedded in the bronze. A 4 in. handle of a large dagger, or possibly sword, came from the lowest level G. It bears part of a wooden grip with two iron rivets, which prove the handle to have been $\frac{3}{4}$ in. in thickness and $1\frac{1}{4}$ in. wide. The termination of the wood is symmetrically finished. Considering that spears and arrows must have formed the principal weapons of the chase, we should expect to find them in abundance. The total number, however, which the excavation has yielded so far is one spear and the point of another, one javelin, and five arrows, all of iron. The first is a socketed spearhead from level G, $5\frac{1}{4}$ in. long, the socket being formed by folding, but leaving an open space at the base of the blade. The head is leaf-shaped, the apparent barb on the side being due to oxidation. From level C we have the point of a long spear, $3\frac{1}{4}$ in. long, and from D a large 6 in. socket of another. A smaller socket was probably that of a javelin. It was customary to use ferrules or counterpoises for the butt end of the spear-shafts; and three of these were approximately an inch across and an inch in depth. A barbed javelin from level F appears to have been socketed, but the socket is missing. Its point has been bent at right angles, probably through contact with a rock. Well-preserved leaf-shaped and socketed arrows, nearly 3 in. in length, were, like the javelin, bent through contact with some hard body. They were possibly placed on one side for repair. Two are from the Celtic level F. There was also an arrow-head of different type, $2\frac{1}{4}$ in. in length, with an entire socket merging into the head. This is of more solid form and not bent. An arrow-head of curious form from level D retains a portion of the wooden shaft, which appears to have some kind of spike embedded in it. A later form (pl. LXXVIII, fig. 12), from the Roman level B, has the socket entire, but, unlike the others, is barbed. A bill-hook, like that of the modern hedge-trimmer, is identical with several found at Glastonbury. It is 10 in. in length and massive, the folded socket leaving its upper end open, as in the case of the spear-head mentioned above. A mass of stalagmite forms a projection from the socket. The triangular chopping-knife (pl. LXXVIII, fig. 10) resembles the sacrificial knife carved on the sides of two altars found at Vindolana and Borcovicus on the Roman Wall. It is 10 in. long and has its point broken off; the socket is perfect, and

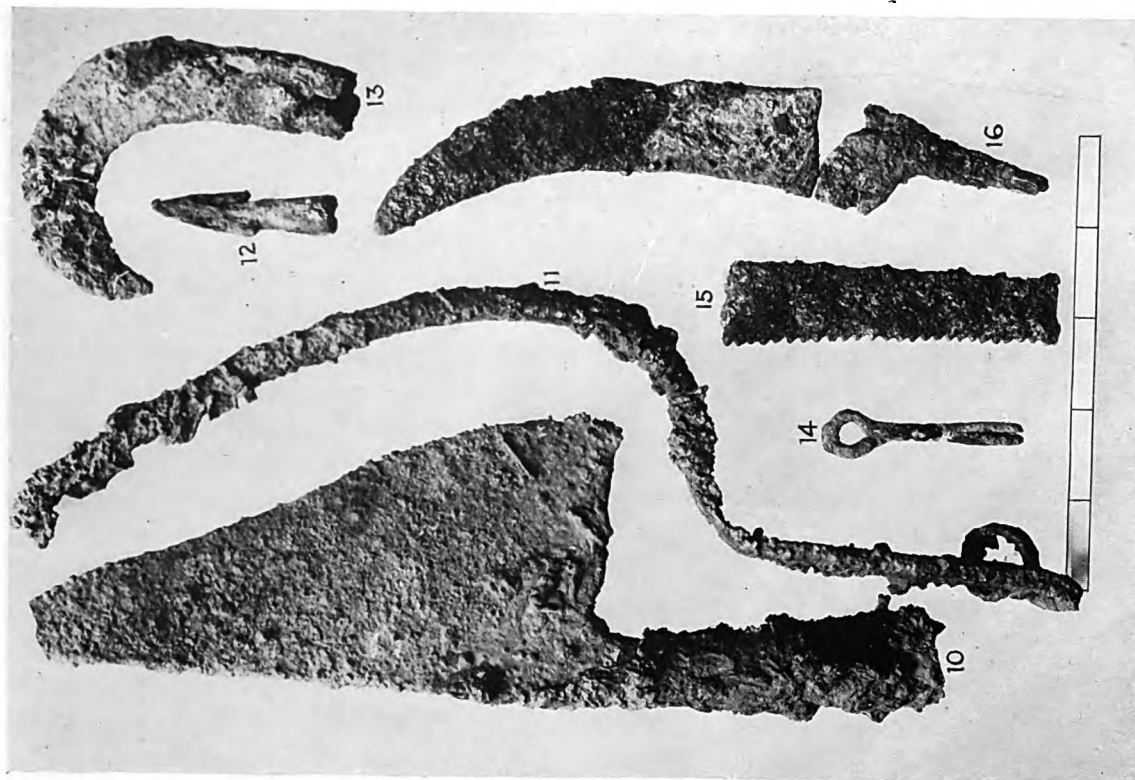
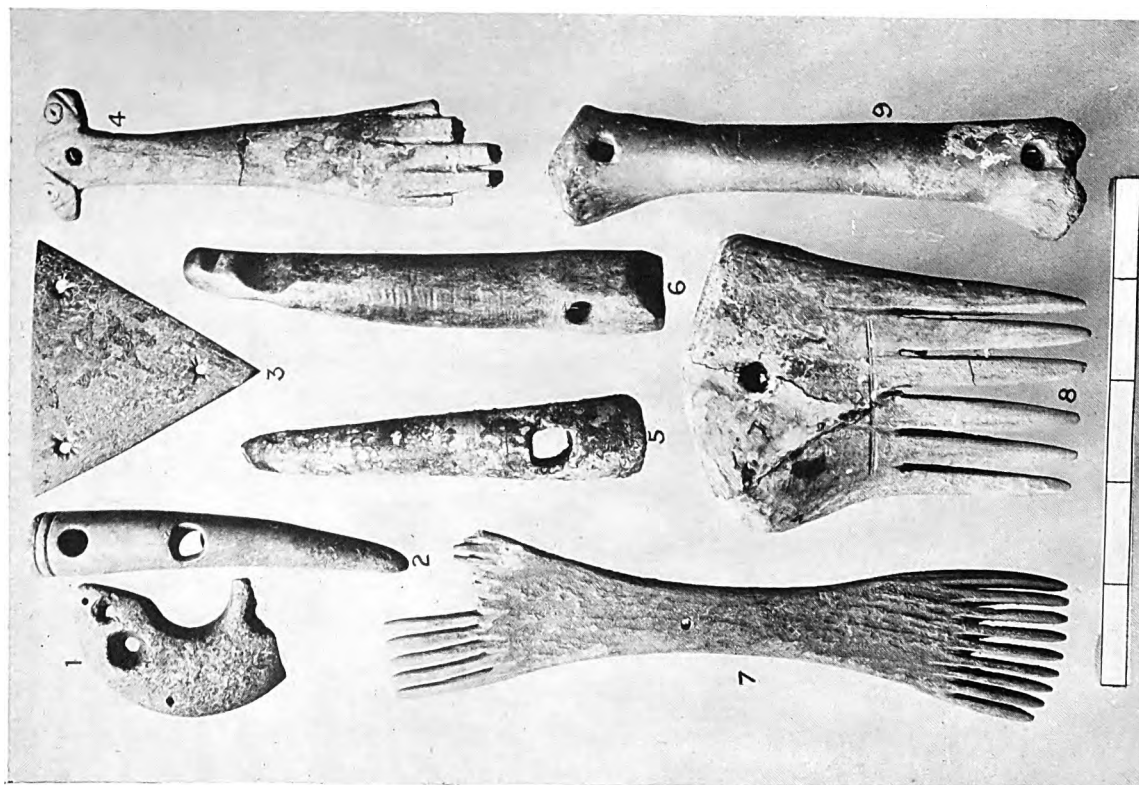
within is part of the wooden handle still pierced by its rivet. The whole is coated by a thin layer of hard stalagmite, which has kept it practically free from rust. Both this and the preceding implement were found in the deep fissure shown on the west side of fig. 4. An implement of quite different form and purpose is illustrated (pl. LXXVIII, fig. 13), obviously a small sickle for cutting off the ears of corn, as in Eastern countries at the present day. It is $3\frac{1}{2}$ in. in length and was found in the Celtic level c. As in nearly all our implements of that age, the socket is folded over and is open at the top, still showing its rivet and traces of a wooden handle. A small knife, shaped exactly like a solid razor, came from the Celtic layer d and is $2\frac{1}{4}$ in. in length.

Tools for working in wood and bone were used by the Celtic people, who attained a considerable degree of proficiency. Of the saws, one very well preserved specimen (pl. LXXVIII, fig. 15) from level f is $3\frac{1}{2}$ in. in length, and has the teeth set in the fashion of the present day, but it will be observed that they slope the reverse way to the taper of the tool, proving that, as with oriental saws, the cut was made towards the operator. We find no trace of handle or mounting. Another has exceedingly fine teeth, too fine for setting, but its precise date could not be fixed. Of gouges we have two well-finished specimens from the upper Celtic level c, one $3\frac{1}{2}$ in. long being shaped for making a rounded cut, while the other is for making a V-shaped cut. Somewhat related to these, though for a different purpose, is a heavy double-edged chisel, evidently for cutting holes in stone, $3\frac{1}{4}$ in. long, with a cutting edge $1\frac{1}{8}$ in. wide, corresponding with the socket holes in a fine pair of beehive querns from the cave.

Among the other objects of iron is a split pin (pl. LXXVIII, fig. 14) which was doubtless used as a linch-pin for a wheel of some kind. It is one of those objects which, coming from a slope of detritus, cannot be accurately dated.

Awls and Drills. Specimens of various forms range from the crudest of bone tools to a very fine iron drill, such as compares favourably with similar articles of the present day. A handle of antler with the stump of an iron awl came from the lower Roman level b. There were six instances of socketed drills or awls, two having still a portion of the wooden handle intact: they occurred from levels d-g. An implement made from the tibia of a goat, and perhaps used in weaving, has at its lower end a perfectly round hole and its point cut off obliquely to straighten the bone. A stout bone awl and other objects of the same material, but of uncertain use, also came from the Celtic levels.

Two objects of special interest throw definite light on the habits of these Cave-dwellers. One (pl. LXXIX, fig. 16) is the hoof-plate of an ox from level d, and it will be observed that the form of the nail-holes is identical with that of modern horseshoes. Hoof-bones of *Bos longifrons*, repeatedly met with, indicate a hoof of just this size. Another is of thinner metal, with round holes, and is from the upper level. Two implements consisting of a straight shaft 3 in. long with one end turned at right angles, and flattened out into a disc, are probably keys of padlocks. Portion of a handle through which a rivet passes into a piece of iron rim, from level c, probably belonged to a bucket which may have been of wood carved from the solid. Another of somewhat similar form came from the fissure opening on the west of fig. 4. It is $10\frac{1}{2}$ in. round its arc, and has a neat hook at one end, the other being broken off. It is $\frac{3}{8}$ in. wide at its broadest, tapering at either end to half that width. One of our oldest finds is apparently a tethering ring with a large looped spike



BONE AND IRON OBJECTS FROM WOKEY HOLE

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or staple which ran loose upon it. It has had its staple driven through a post and clinched, and came from level G, in which it was one of the lowest finds. A portion of a second similar ring and spike was found near by. A latch-key of the usual British type (pl. LXXVIII, fig. 11) is 12 in. long and $\frac{3}{4}$ in. wide at the handle, which is looped and had a loose ring for suspension. It accompanied the similarly encrusted chopping-knife (pl. LXXVIII, fig. 10) and the bill-hook. From its similarity to the latch-lifter or key of the Glastonbury lake-village and other sites, we suggest that it served to open a bolted door in the palisade. An object believed to be the shoe of a wooden spade or shovel came from the upper level A. Such shovels have been found from time to time in the process of working the débris at the Priddy lead-works, three miles away on the top of Mendip, and one was found in the cave itself. An object of unknown use is of thin iron in the form of a diamond, mounted upon a circular and much more massive piece which served as a handle or support. It is from a slope of detritus, and of doubtful age. A looped spike $5\frac{1}{2}$ in. long, and a small handle of iron, probably for a cauldron, came from level F. An object of familiar form, 2 in. in length, consists of a toothed wheel, set after the fashion of a spur, the pointed handle having a series of engraved lines giving it at first sight the appearance of a screw. This was from the Roman level near the door of the cave, and was probably a tool for milling a pattern on pottery, several of the Celtic specimens bearing just such a pattern as would be made by this tool (figs. 12, no. 7 and 13, no. 5). A lump of imperfectly smelted iron measures 3 by 2 by $1\frac{1}{2}$ in. and was found in level B; a smaller piece came from level F. Among the other objects of iron should be mentioned the nails, which prove that there was great diversity in the wooden articles made in the cave. The majority of the nails are from the Celtic layers, especially E and F. As the same types occur all the way through the excavations, having been probably picked up and used over and over again, we have not thought it necessary to give their respective levels. Other small objects of iron from the Roman levels include a small buckle; a portion of a twisted wire link, possibly part of a balance; and the point of a hook-shaped blade, apparently a curved knife or sickle. Two penannular brooches (fig. 6), quite perfect, are from the bottom of the Roman deposit.

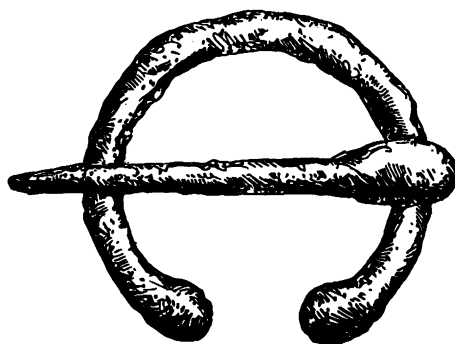


Fig. 6. Iron penannular brooch. $\frac{1}{2}$.

Bronze. It is perhaps remarkable that specimens of bronze are rare in the Celtic layers. We have only seven articles which certainly came from them, though others occurring in the detritus slopes and in pits among boulders may be of pre-Roman age. A group of eight leaves of bronze, very much corroded, from the bottom of a deep pit, shown in fig. 4, on the eastern side of the passage, formed an ornament of which each leaf was fastened to the next by a bronze rivet, and may have been pinned through on to some support beneath. A rivet, $\frac{1}{4}$ in. in length, still remains fixed in one of them. The thirteen S-shaped links of a chain nearly 6 in. long, from the bottom of level D, vary much in size and degree of bending, whilst two terminal links are of brighter metal and show some slight decoration. A ring $\frac{7}{8}$ in. in diameter, apparently a ring brooch with the pin missing, is from level C: it is roughly triangular in section, the back being flat. Another brooch, $1\frac{3}{16}$ in.

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or staple which ran loose upon it. It has had its staple driven through a post and clinched, and came from level G, in which it was one of the lowest finds. A portion of a second similar ring and spike was found near by. A latch-key of the usual British type (pl. LXXVIII, fig. 11) is 12 in. long and $\frac{3}{4}$ in. wide at the handle, which is looped and had a loose ring for suspension. It accompanied the similarly encrusted chopping-knife (pl. LXXVIII, fig. 10) and the bill-hook. From its similarity to the latch-lifter or key of the Glastonbury lake-village and other sites, we suggest that it served to open a bolted door in the palisade. An object believed to be the shoe of a wooden spade or shovel came from the upper level A. Such shovels have been found from time to time in the process of working the débris at the Priddy lead-works, three miles away on the top of Mendip, and one was found in the cave itself. An object of unknown use is of thin iron in the form of a diamond, mounted upon a circular and much more massive piece which served as a handle or support. It is from a slope of detritus, and of doubtful age. A looped spike $5\frac{1}{2}$ in. long, and a small handle of iron, probably for a cauldron, came from level F. An object of familiar form, 2 in. in length, consists of a toothed wheel, set after the fashion of a spur, the pointed handle having a series of engraved lines giving it at first sight the appearance of a screw. This was from the Roman level near the door of the cave, and was probably a tool for milling a pattern on pottery, several of the Celtic specimens bearing just such a pattern as would be made by this tool (figs. 12, no. 7 and 13, no. 5). A lump of imperfectly smelted iron measures 3 by 2 by $1\frac{1}{2}$ in. and was found in level B; a smaller piece came from level F. Among the other objects of iron should be mentioned the nails, which prove that there was great diversity in the wooden articles made in the cave. The majority of the nails are from the Celtic layers, especially E and F. As the same types occur all the way through the excavations, having been probably picked up and used over and over again, we have not thought it necessary to give their respective levels. Other small objects of iron from the Roman levels include a small buckle; a portion of a twisted wire link, possibly part of a balance; and the point of a hook-shaped blade, apparently a curved knife or sickle. Two penannular brooches (fig. 6), quite perfect, are from the bottom of the Roman deposit.

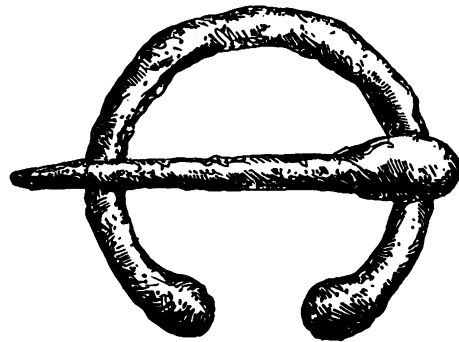


Fig. 6. Iron penannular brooch. 1.

Bronze. It is perhaps remarkable that specimens of bronze are rare in the Celtic layers. We have only seven articles which certainly came from them, though others occurring in the detritus slopes and in pits among boulders may be of pre-Roman age. A group of eight leaves of bronze, very much corroded, from the bottom of a deep pit, shown in fig. 4, on the eastern side of the passage, formed an ornament of which each leaf was fastened to the next by a bronze rivet, and may have been pinned through on to some support beneath. A rivet, $\frac{1}{4}$ in. in length, still remains fixed in one of them. The thirteen S-shaped links of a chain nearly 6 in. long, from the bottom of level D, vary much in size and degree of bending, whilst two terminal links are of brighter metal and show some slight decoration. A ring $\frac{7}{8}$ in. in diameter, apparently a ring brooch with the pin missing, is from level C: it is roughly triangular in section, the back being flat. Another brooch, $1\frac{3}{16}$ in.

long (fig. 7), is referred to the transition between La Tène II and III, which is rarely represented in this country. In this case, as in that figured in the British Museum *Iron Age Guide* (fig. 82), the collar has become merely ornamental, the foot having been brought up to the lower part of the bow, and the enclosed space containing none of the ornament which characterizes the later forms. This was found associated with a broken currency-bar and Celtic pottery close to the stalagmite floor, which occurred slightly beyond the section shown in fig. 4 near the western wall of the passage. Portions of two twisted bracelets are from level c; and a solid bronze dagger-mount, with its accompanying blade, has been already referred to (p. 575).

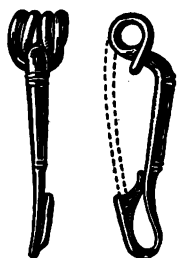


Fig. 7. Bronze brooch. $\frac{1}{2}$.

A delicate silver ear-ring, $\frac{3}{4}$ in. across, thickened at the base and flattened on one side, was associated with part of a crushed skull, probably of a young woman, and came from level d. One of our rare silver coins also came from the Celtic deposit, where the stratification was most marked. This is a denarius of Marcia, B. C. 124, in good preservation, the inscription being clearly legible. Its occurrence at so high a level suggests that the great deposit lying beneath it may go back for much more than the few hundred years commonly assigned to the late Celtic period.

Among Romano-British bronze, from the upper levels A and B, are a finger-ring of bronze from level A, having a lozenge pattern separated by dividing bars; and a bronze ear-ring with overlapping points and almost rectangular in section from a scree under the east wall, where the ages are mingled.

A round bronze brooch $1\frac{1}{8}$ in. in diameter, from level B, is of thin repoussé bronze, mounted on a more substantial piece of the same metal, the broken pin being hinged.

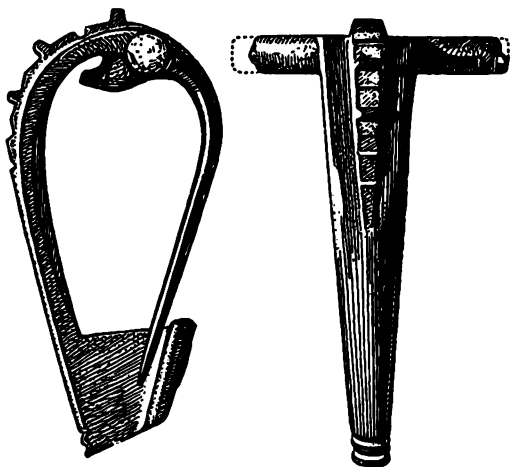
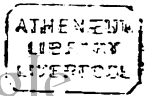


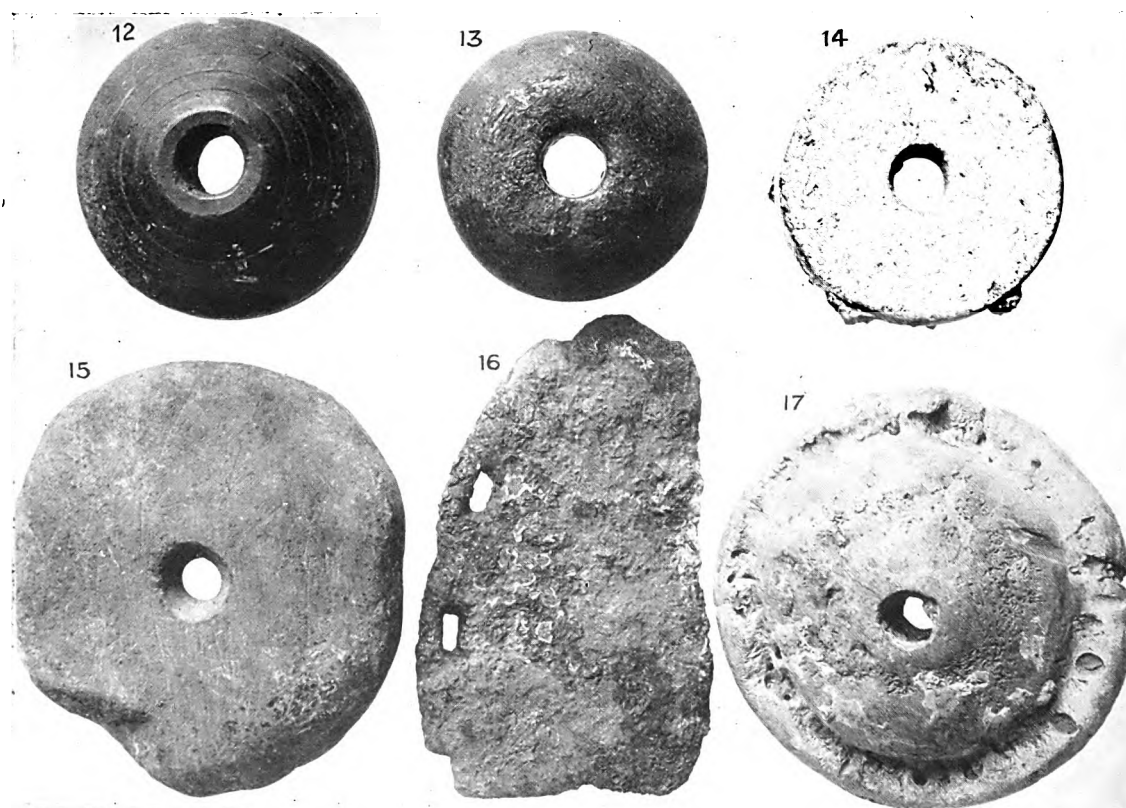
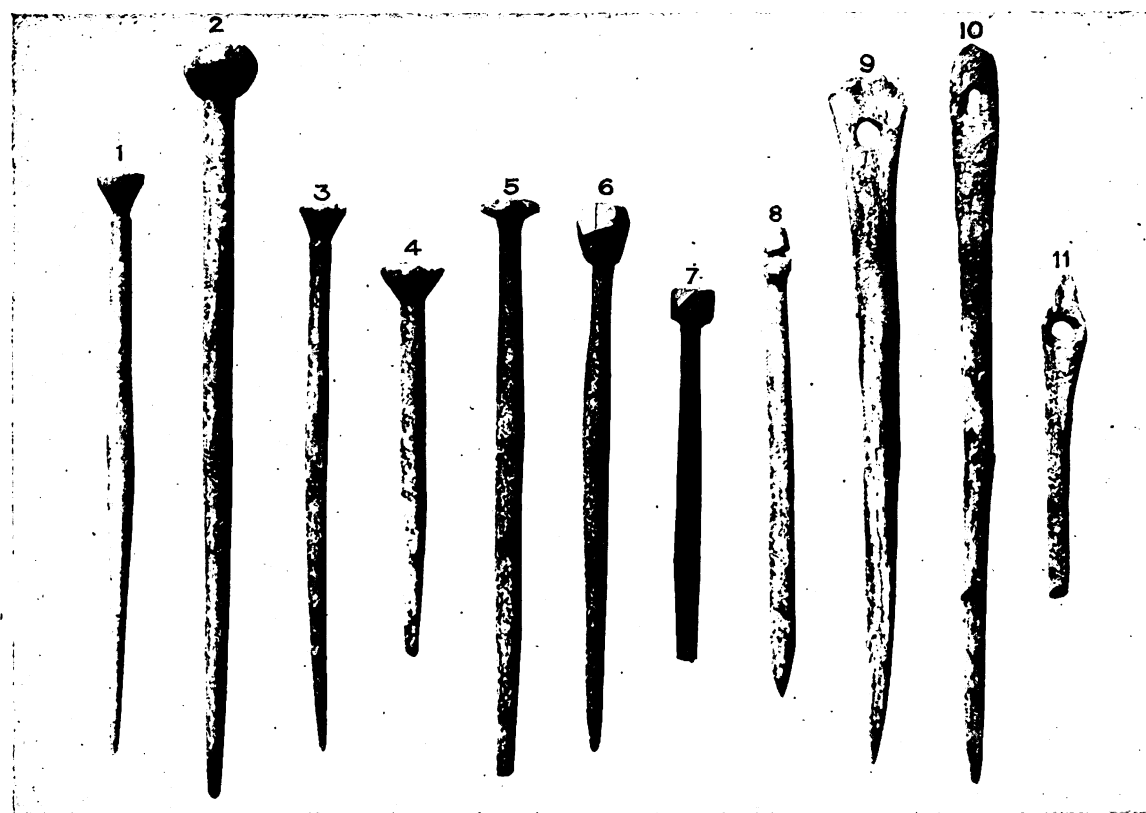
Fig. 8. Roman bronze brooch. $\frac{1}{2}$.

The raised figure is probably a stag, surrounded by a bold pattern resembling a series of minute discs, strung on a cord. A fine brooch (fig. 8) $2\frac{1}{4}$ in. in length is from level B, but found in such a position that it may possibly be of earlier date. Its head is T-shaped, containing only the iron pin on a hinge. The bow has a toothed ridge towards the head, and transverse lines towards the foot, which is solid and without decoration. A penannular brooch of $1\frac{3}{8}$ in. diameter was found with Roman pottery at the bottom of 'Hell Ladder'. When found it had knobs of corroded bronze raised upon the ring. Three hinges came from the Romano-British deposit, and a repoussé disc was found in the boulder chamber to the east of the main passage; it may have formed part of a brooch. A button of cup-like form, with

turned-over edge, is of Roman age, as well as portions of a bronze purse from level B, which was very much crushed when found. A torc-like hook accompanied it, together with a third brass of Constantine.

Three channelled bands must have formed the edge of, and been riveted to, some spherical vessel of which there was no trace: it was probably of wood. A pair of tweezers





BONE PINS, SPINDLE-WHORLS AND HOOFF-PLATE, WOOKEY HOLE. $\frac{1}{2}$

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is just over $\frac{3}{8}$ in. wide and $2\frac{3}{4}$ in. long. This and the bands are thought to be of Roman¹ age, although they did not occur in definite stratification, but in material complicated by boulders. A stout pin with decorated head bears some resemblance to one of the bone pins (pl. LXXIX, fig. 8). Two others are of an undetermined white metal, one having a much corroded bronze head. Another, of excellent workmanship, had, when found, a faceted head like pl. LXXIX, figs. 6, 7. Several bronze pins of varying length, some headless, came from the upper Roman level A; but one of a different type (fig. 9), nearly 4 in. in length, with its head flattened and looped over, came from the lower Roman level B. It may originally have had a ring attached to the head.

Glass. The Celtic deposit yielded only one specimen, a broken bead of typical Celtic form, with decoration resembling the human eye, the three colours being blue, white, and brown.

Of Roman glass, specimens were more numerous, both ornamented and plain green bottle. A piece of green glass showing sand markings has one edge worked like a neolithic flint.

Pins, needles, &c. Specimens of bone were found throughout the levels. The greatest depth at which they occurred was level E, where we obtained a pretty little needle (pl. LXXIX, fig. 11). It is $1\frac{3}{4}$ in. in length and has a large eye, not drilled, but cut out with some pointed implement. From level D came part of a larger needle and bone pins, one having been broken and repointed. From the next higher Celtic layer C we have two of the best needles obtained, $2\frac{7}{8}$ in. and 4 in. long. The broadened head shown in pl. LXXIX, fig. 11, has disappeared, and the eye is a longitudinal slot (pl. LXXIX, fig. 10). Figs. 1–8 of pl. LXXIX are pins from the top Celtic layer C and the Romano-British layer B, showing heads of widely varying forms, from flat to rounded and conical.

In the Roman levels we obtained a very good series of pins and needles. One needle, a broken specimen, is perfectly round in section, with fine notches on one side, possibly to improve the grip; and a well-made needle or bodkin measures $5\frac{3}{8}$ in. in length, with a wide head. This and several others are made from the fibula of the goat, some of which bones we have found partly prepared for the purpose. Pins from the lower Roman level B include perhaps the finest in the collection, with much originality in the form of the head. Figs. 6 and 7 of pl. LXXIX are specimens with perfect faceted heads, whilst fig. 2 is the largest of all, nearly 4 in. in length. Specimens of the usual type are figured, several being re-sharpened specimens. One specimen (pl. LXXIX, fig. 8) bears evidence that the saw was sometimes used to shape the bone. As articles for fastening clothing are scanty in the cave—buttons being very rare and only occurring in the highest level, whilst brooches also are uncommon—we conclude that these pins were used for the purpose and were not worn in the hair. The Celtic skeleton already mentioned from Priddy, though intact in every particular, had the tresses of hair plaited and tied at the ends without any trace of pins, though decorative beads were present with the body.



Fig. 9. Bronze pin. $\frac{1}{2}$.

¹ Similar bands occur among definite Roman remains at Gough's Cavern, Cheddar.

A point worthy of note is that the Roman element here caused no change whatever in the form or use of the pins. Iron needles, mostly with the eye-portion missing, came from the lower Roman level B.

Tin and Lead. Articles of these metals are scarce, but enough occur to show that trading took place with Cornwall. An ingot of mixed metal contains by weight, according to Mr. Jas. Ricketts of Wells, who has kindly analysed it: Tin 33.84, lead 38.46, impurities and loss 27.69. It was found quite at the bottom of level E, and is therefore of considerable age. It presents a much fractured surface as if due to rapid cooling. One end appears as if it had been cut off obliquely. Another lump of alloy of the same metals, obviously the result of pouring from a crucible, was found in the boulder chamber. This lump has been analysed by Mr. G. E. Webb and proved to be composed of tin 16.5, lead 70, impurities 13.5. Of lead the only two examples are spindle-whorls, convex on one side, with a diameter of $1\frac{1}{8}$ in. and therefore precisely similar to one from Thor's Cave in Derbyshire.¹ They are from the Celtic level C, as was also a little crucible of clay, $1\frac{1}{2}$ in. in diameter, which would have held just enough metal to cast a spindle-whorl. It appears, however, to be unused.

Spindle-whorls. Other spindle-whorls of various forms occurred almost throughout the excavations. One of the oldest objects we have, from the lowest level of the excavation, is an antler-burr whorl, $2\frac{1}{4}$ in. in diameter, with the outer edge rounded off (pl. LXXIX, fig. 17). Its spin is somewhat eccentric through faulty piercing: it was associated with two other whorls and a massive pounder made of antler. Of the latter whorls, one was $2\frac{1}{4}$ in. in diameter and little more than $\frac{1}{4}$ in. thick, with a very small hole, whilst the other pl. LXXIX, fig. 15) is a heavy whorl made from the cave conglomerate, somewhat concavo-convex in form, showing marked striations on both sides and periphery, whilst its hole is countersunk from each side in a manner suggesting that it may have been used as the head of a bow drill. In this it resembles a whorl-like object recorded by Evans, *Ancient Stone Implements*, 2nd ed., p. 439. A femur-head adapted for spinning purposes is also from level G, and this form was evidently copied in one of unbaked clay from E, which has the advantage in weight. The clay whorl, however, appears never to have been completely pierced. Level F has yielded crude whorls of lias and clay, both baked and unbaked; D gave us more perfect forms in these materials (pl. LXXIX, fig. 14), and a double-convex specimen, turned from Kimmeridge shale, may be either a whorl or bead (pl. LXXIX, fig. 13). Level C also yielded well-made whorls in pottery roughly chipped to shape. Two whorls are of lead, and several whorl-like discs were unperforated, while the upper levels A and B yielded finely finished specimens. One, almost conical, is decorated with seven rings, two of which are on the edge (pl. LXXIX, fig. 12). The other side is slightly convex and has four concentric circles upon it. The pierced hole tapers slightly, and the material is a nearly black stone, apparently slate. Another is similarly turned, but is of baked clay and has its under surface slightly concave. It is decorated with black lines, eight on the upper and three on the under side, and in this case again the hole is tapered.

Pebbles and shale. Of what may be considered gaming-stones from levels A, B, and C, six are common seashore flint pebbles, another a white quartzite pebble probably from

¹ Evans, *Stone Implements*, 2nd ed., 438.

the Old Red Sandstone Conglomerate, also a large Cave-pearl, such as still occur in the great chambers beyond. Among objects of flint may be mentioned a curved knife $2\frac{1}{2}$ in. long, found in B, the lower Roman level. A scraper-like piece from level F was possibly a strike-a-light, and portions of one large ball of flint came from level D.

Of Kimmeridge shale, a lathe-turned whorl (pl. LXXIX, fig. 12) has been mentioned above, and there were two fragments from level D of a large turned cup $\frac{3}{8}$ in. in thickness and $6\frac{3}{4}$ in. in diameter, at the level of the larger portion. In connexion with these, we may draw attention to two bone bands which have iron rivets and must have been used for some such vessel as this.

Querns. Conglomerate from the Old Red Sandstone of Pen Hill or of North Hill was chosen for querns, a hard and durable material, with a coarse cutting grain, and numberless white quartzite pebbles to assist attrition. With crude tools of iron the manipulation of the stone must have cost infinite labour. A pair of beehive quern-stones were found together in the position shown in section (fig. 2). They belong to level E, at which period they were placed at the entrance to a cavity, the subsequent levels accumulating over them. The top stone is 13 in. across at the base, and $3\frac{3}{4}$ in. thick measured through the centre hole; this is worn to a slight oval by contact with the spindle, which was fixed in the nether stone. The top stone was manipulated by one side-handle only, the socket for which was cut with an iron chisel. The nether stone is much more massive, and has been left in a less finished condition on all but the grinding surface. The central socket hole is $1\frac{3}{4}$ in. deep and the same in diameter.

The upper stone of a similar quern, made from the same material, but somewhat flattened at the top, has two handle holes, one of which has a portion broken away. This stone measures 13 in. across the base and is $3\frac{3}{4}$ in. thick through the centre hole. It was embedded in a slope of wood ash, containing nothing but Celtic pottery, down the small passage on the east side just within the door of the cave. A saddle-quern came from level D, and mealing-stones were found in close proximity. All are made of the same bed of Old Red Sandstone, not the conglomerate bed.

Lamp. The only lamp found was in such a position that it was impossible to determine its precise level. It lay amongst detritus under the east wall, 20 ft. from the doorway, and is of oolite, the only article of this material found. It is roughly rectangular in form, and the cavity is $3\frac{1}{2}$ in. square and $1\frac{3}{4}$ in. deep, leaving the sides $\frac{3}{4}$ in. thick. On two places inside the cavity of the lamp are accumulations of lampblack where the wick rested against the side. A very similar lamp is figured in Evans's *Stone Implements*, 2nd ed., fig. 368, from Ty Mawr, Holyhead.

Bone and antler. Some of the most important finds are of bone and antler. There were five types of combs, and no duplicates of any have so far been found in the cave. A long, decorated comb of antler of Celtic origin is similar to a number found in the Glastonbury lake-village, the pattern consisting of crossed lines with a series of intersecting semi-circles at the toothed end. The four fragments were found separately, and after the teeth were broken it appears to have been rounded off at this end for some other purpose. The next comb (pl. LXXVIII, fig. 4), of similar origin and material, is $4\frac{1}{2}$ in. in length, and shaped like the human hand, with lines to indicate the knuckles. Of special interest is the unusual form of the decorated handle, which is T-shaped. Pl. LXXVIII, fig. 8 shows a form of comb

hitherto unknown from this part of Britain. It is a massive comb formed of antler and measuring 4 in. by 3 in. The portion restored was lost through crushing between two large stones and was irrecoverable. Combs of this type occur more frequently in Scotland, and one very similar is figured in the *Cat. Nat. Mus. of Antiq. of Scotland*, 1892, p. 242. A double-ended comb of antler (pl. LXXVIII, fig. 7) $6\frac{3}{4}$ in. in length has six teeth missing at one end. It has a small perforation near the centre, and is undecorated: as a weaving comb it is of unusually light make. Another of very different type is of thin bone, $1\frac{1}{2}$ in. across. The teeth are sawn with a fine saw, and the usual bars on either side (one now missing) were attached by means of iron rivets. The bar is decorated with concentric circles arranged close together. The type is illustrated on p. 232 of the catalogue just mentioned. One object of bone (fig. 10) is of singular interest. It is of Celtic age and was carved from a leg bone, the inside being worn perfectly smooth. The pointed end is spoon-shaped, and is polished to perfect smoothness. The other end is cut off square, and half the circumference of the bone has been removed to a depth of nearly $\frac{3}{4}$ in. The whole outside surface, except half an inch at the point, is decorated with ring-and-dot pattern in groups, generally

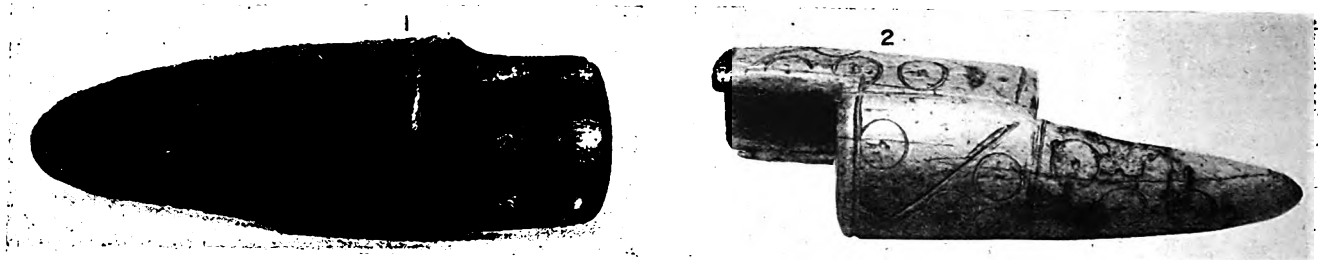


Fig. 10. Ornamented bone of unknown use. $\frac{1}{4}$.

of seven separated by lines. Of the same period are two bands of bone $\frac{1}{4}$ in. wide, tapered at the ends, which overlap and are secured by iron rivets, one of them intact. The method of obtaining such bands is a problem, as they are solid, and show no trace of internal tissue. Their purpose was doubtless to secure some vessel which was liable to split, and it is noteworthy that fragments of such a bowl or cup of Kimmeridge shale occur from the same level. Also of Celtic origin is a perfectly equilateral triangle of thin bone (pl. LXXVIII, fig. 3), each side being $2\frac{1}{2}$ in. in length. It will be observed that half an inch from each angle a hole is pierced through the bone, and surrounding each are star-like radiating grooves. We found by experiment that if threads are passed through each hole of the triangle and attached to a spindle with a whorl fixed, the result is a three-ply cord; and when so used, the threads fall invariably into one or other of the groovings surrounding the perforations.

An antler pick 4 in. long is broken off at the squared hole, which shows the method of fixing the handle. A partially squared hole was made in the latter, the antler was forced into it, and a square peg (probably of wood) was driven through at right angles. Around this rivet hole are evident signs of wear, as if the pick-head had worn loose by constant use. A great brow-tine $10\frac{1}{2}$ in. long was probably prepared for similar use. Four implements which

commonly go under the name of cheek-pieces (pl. LXXVIII, figs. 2, 5, 6) are supposed to have been used as part of the mouth-piece of pony-bridles in Celtic times. They are of highly polished antler, sometimes decorated with lines. One (pl. LXXVIII, fig. 6) shows near its point two deep groovings due to extensive wear. Another is pierced at the end to the depth of an inch. Many similar cheek-pieces have been found in the excavations of the Glastonbury lake-village. We have already indicated that the Celtic inhabitants of the cave knew the art of lathe-turning, and we illustrate half a bearing, in bone, of what was doubtless such a machine (pl. LXXVIII, fig. 1). It was a flat ring, of which the circumference was cut through to allow the spindle to drop in. Countersunk holes, with finer supplementary drilled ones, provided a means for fixing the bearing against some structure for support. The central or shaft hole shows very marked wear. A small piece of antler is highly polished on the outer side by long use as a kind of slick-stone or burnisher; and a bone knife with quite a good edge was made from a split ox-bone. Roe-deer antlers, sawn off and worked up, appear to have been used as awls or borers, or possibly as implements for shaping or lining pottery. Part of a large antler of red-deer from level G, of which the tines have been sawn off, shows the difficulty experienced in severing so hard a substance with crude iron saws. It was detached obliquely from the beam to obtain an edge, which appears to have been used for some time for pounding. The sawn surfaces show a degree of polish due to long handling. Portion of a rib with a series of evidently intentional cuts made with a fine knife-edge was probably a tally-stick; and bones (pl. LXXVIII, fig. 9), pierced to adapt them to some unknown purpose, also occurred. One is pierced no less than six times, one hole being re-bored to obtain greater accuracy. At the end removed from the holes a notch was sawn, evidently to guide the course of a cord; and the wear of another suggests that it was used to draw tight a cord which passed over it. Another implement $3\frac{1}{4}$ in. in length, and $1\frac{1}{2}$ in. in circumference, is the proximal end of a metatarsal bone, probably of goat. It is pierced in the centre of the end with a squared hole, and obliquely from back to front with a round hole with marks of attrition, showing that it had been much used for guiding a cord which had passed through it at tension, wearing the top of the hole on one side and the bottom on the other. A similar bone $3\frac{1}{2}$ in. long is pierced at the end and at one side only with an oval hole, whilst a shorter specimen 2 in. long is pierced only at the end. These are all from level D. The metatarsal of a red deer, from the same level, $6\frac{1}{2}$ in. long, with the distal end missing and with an exceedingly high polish, was evidently used for a long period as a burnisher. A portion of rib from level C, 4 in. in length, has the broad end cut into five teeth, resembling the teeth of a saw, one-sixteenth of an inch from point to point. This is unquestionably a potter's tool for making the waved pattern seen on a number of fragments, especially the fine ewer shown in fig. 12, no. 1. This and a burnishing tool of deer-rib 7 in. long render it probable that much of the pottery found in the cave was made on the spot. The only specimen of worked bird-bone is a portion of a crane's ulna, 4 in. in length, which has a round hole half an inch from the end, and, more doubtfully, in the end also; perhaps for use in weaving.

Human Remains. Dean Buckland appears to have found human remains across the river in the first great chamber, and also probably in the eastern upper gallery, near its bifurcation. There is little doubt that both were interments, and some twenty years ago we still found traces of human bones in both these places. At the former spot, human

teeth, finger and toe bones, with other fragments, exist at a level just out of reach of the highest floods, in a passage reached by climbing over the sandbank which is visible on the left as you look down stream. This little passage ascends very steeply, and we know nothing of its higher parts. With the bones, and mingled with the gravel and mud on the floor, are fragments of pottery, too much worn to identify. How men crossed the river to this point for the purpose of burying their dead is not clear. When six feet of water is drained off from the cave there are exposed great boulders with bosses of stalagmite, and with difficulty, and not without some risk, it is possible to pass over to the lower muddy slopes of the sandbank. In days gone by the passage may have been easier, but there is evidence that the water long maintained a level several feet higher than it now reaches with both sluices closed.

As previously stated, we found some time since that an interment had been disturbed, and much of the skeleton removed, a few yards beyond the bifurcation of the eastern upper gallery. Portions of vertebrae, finger joints, and part of a scapula remained, whilst stones and gravel had been thrown back. Within the last year, however, we have proved that fragmentary remains of a similar character may be found almost anywhere in that gallery, on removing any of the stones of the floor. They seem to be unaccompanied by pottery or implements. In the boulder chamber shown on the plan (fig. 1) we have found human remains associated with Romano-British pottery. The distribution of the human remains has been a puzzle to us. There were fragments of every portion of the human skeleton scattered upon the surface where this was occupied by boulders, beyond the area of our diggings. It seems impossible that this can have resulted from any form of burial, as these fragments had been as carelessly handled as the bones of the food-animals. The same applies to the excavated area, except in one case where the possibility of interment comes in. Both embedded in the ordinary floor-material and among the bone refuse we found human bones, which must have been thrown there at the same time. All must have lain mingled upon the surface during the occupation and some exhibit marks of gnawing. Moreover, certain well-preserved pieces of human skull were found embedded in the stratum of ash, and no other fragment of skull in the same condition has appeared, though we have long since passed the locality, and removed every atom of material from wall to wall. Skeletons are represented in our finds by very old individuals of massive build, and little babies with uncut teeth. In at least one case, that of the skeleton found in the fissure on the left of fig. 4, there is evidence that the body lay on the surface above the fissure, and only gravitated into the hole after disintegration. One femur and some of the vertebrae were discovered, not in the fissure but, later, at the bottom of the slope on the other side of the passage. The conclusion is that the individual was the sole occupant of the cave at that time, and died untended, the bones subsequently rolling away in contrary directions. Near the door of the cave, in a little fissure under the east wall, the long bones of another skeleton were discovered, in a situation which pointed to interment and subsequent disturbance by animals; and at the bottom of a slope of detritus near by, a lower jaw and the upper end of a very massive femur lay on the surface.

The few perfect long-bones afford some indication of the stature of the inhabitants. The measurements of the bones of the skeleton found in the fissure are :—

	LENGTH.	LEAST CIRCUMFERENCE.
Femur	16.5 in.	3.25 in.
Tibiae	13.5 in.	2.75 in.
Humerus	11.75 in.	2.5 in.

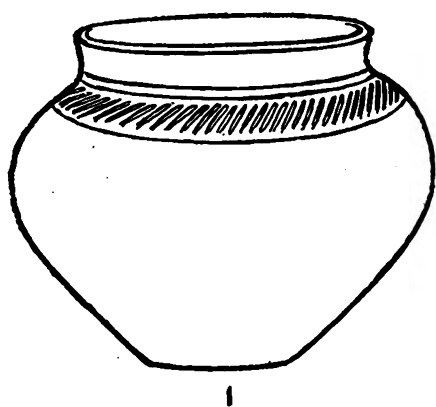
The measurements of two other humeri are :—

12.25 in.	2.44 in.
11.5 in.	2.37 in.

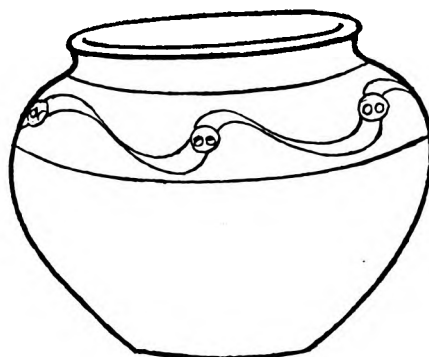
The stature of these individuals would therefore appear to have been small, varying from 4 ft. 9 in. to 5 ft. 1 in. Unfortunately no perfect skull has occurred throughout the workings; but lower jaws and detached teeth have been found, generally showing marked wear, which is commonly supposed to be due to the use of gritty meal. Both male and female skeletons are represented, as shown by the shape of numerous clavicles, &c. The pair of femora from the fissure and its adjacent slope are markedly pilastered, the outstanding *linea aspera* projecting quite $\frac{1}{4}$ in., whilst the convexity of the bone is most marked. Everything indicates therefore that the occupants of the cave were of the recognized Celtic type, and were accustomed to the squatting posture supposed to be characteristic of the race.

Hone-stones, Hammer-stones, Slick-stones, &c. Of the hones some are made of micaceous schist probably from Cornwall, others of black slate and fine sandstones similar to those used at the present day. Locally the Ebbor grits of the Millstone Grit series, the Old Red Sandstone and the stalagmite of the cave itself were made use of, while the conglomerate of the cavern and the lias of the adjacent hillsides were used for weights. A perforated hammer-stone, pierced from each side irregularly, was broken in use; and a flat piece of fine conglomerate, as well as a naturally pierced piece of grit from Ebbor, probably served as loom-weights. Specimens made of burnt clay occur, but so far in each case broken. In addition to the mealing or hammering, stones were sometimes used for preparing pigment; a grit slab still has attached to it a quantity of fine red material, of which we also found a lump. There were numerous large slabs of this character, of grit, red sandstone, and of lias, all bearing traces of use as rubbing-stones. A very delicate little whetstone, perforated for suspension, is made of imported mica schist, and, with a much-worn hone-stone of very fine material, was found embedded in stalagmite at the north end of the excavations. A hone-stone of grit which has apparently seen little wear is perfectly squared. Among the mortarium stones is a massive and perfectly spherical specimen made from the stalagmite of the cavern itself. Unique among the hones is a fragment of pottery which has been worn deeply on its edge by constant use for sharpening knives.

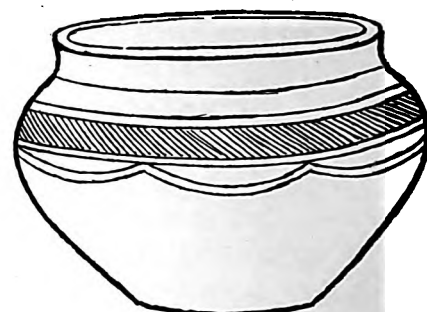
Pottery. It is probable that in the pottery found during our explorations we have representatives of most known types of the late Celtic period. Ignoring the large assemblage of Romano-British specimens, which comprises an equally wide range of form and pattern, we illustrate in figs. 11, 12, and 13 a considerable variety of late Celtic designs. They comprise utensils apparently intended for all sorts of domestic purposes: some were found with burnt food still adhering, and bearing traces of fire; others were perforated after baking at the base with two, three, or four holes, $\frac{1}{4}$ in. in diameter, and were probably used as strainers. A decorated urn (fig. 12, no. 5) has been restored from large portions; others, found complete adjacent to the 'goat's stable', were most likely milking-pots, whilst the larger vessels were most probably storage urns. Fig. 12, no. 1 is a water ewer of



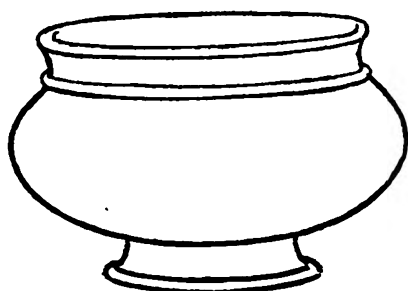
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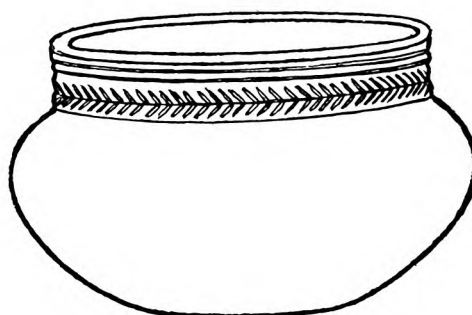
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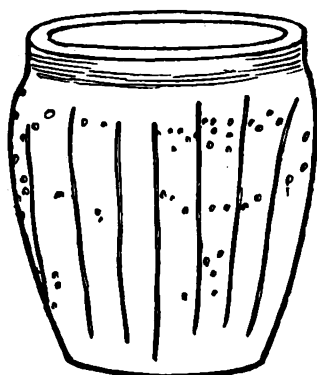
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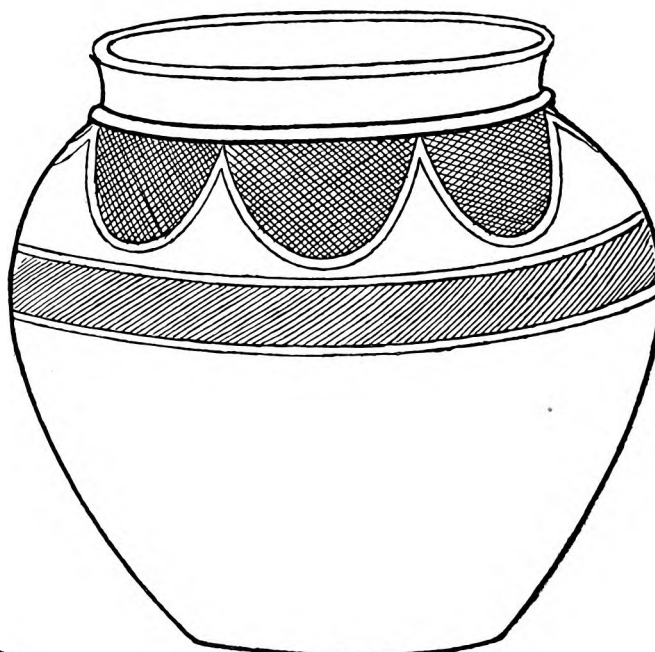
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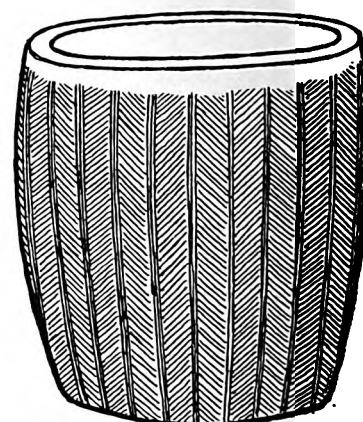
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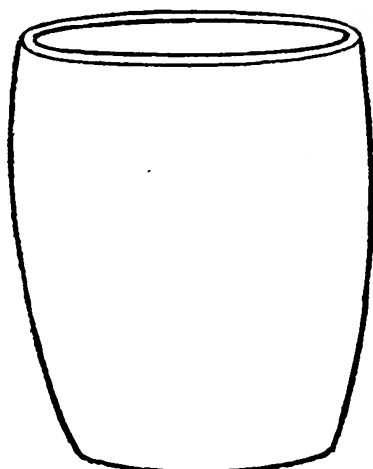
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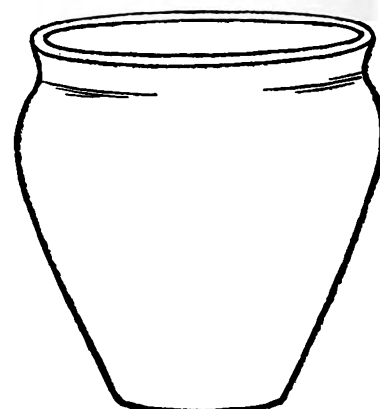
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11



12



Fig. 11. Pottery from Wookey-Hole.

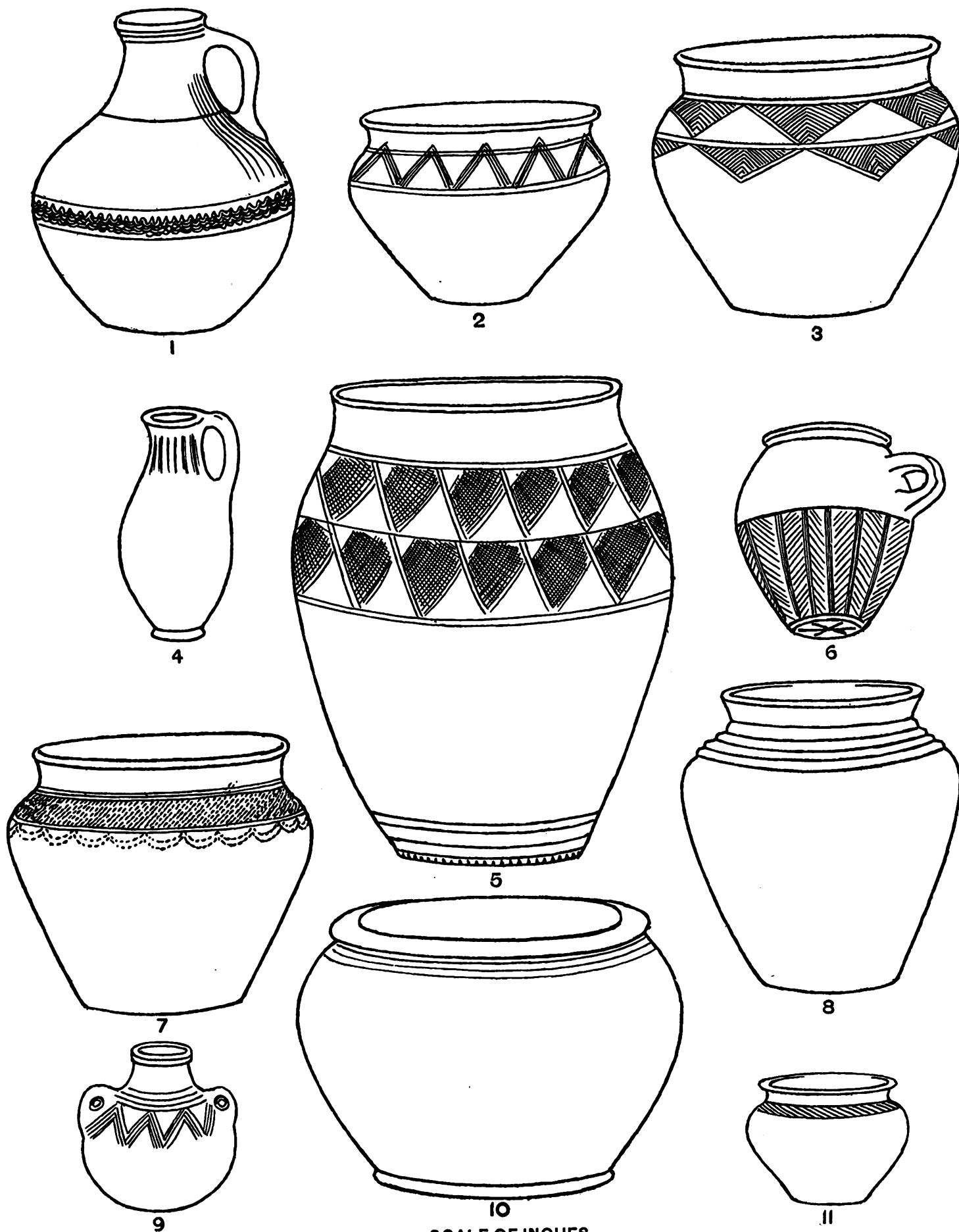


Fig. 12. Pottery from Wookey-Hole.

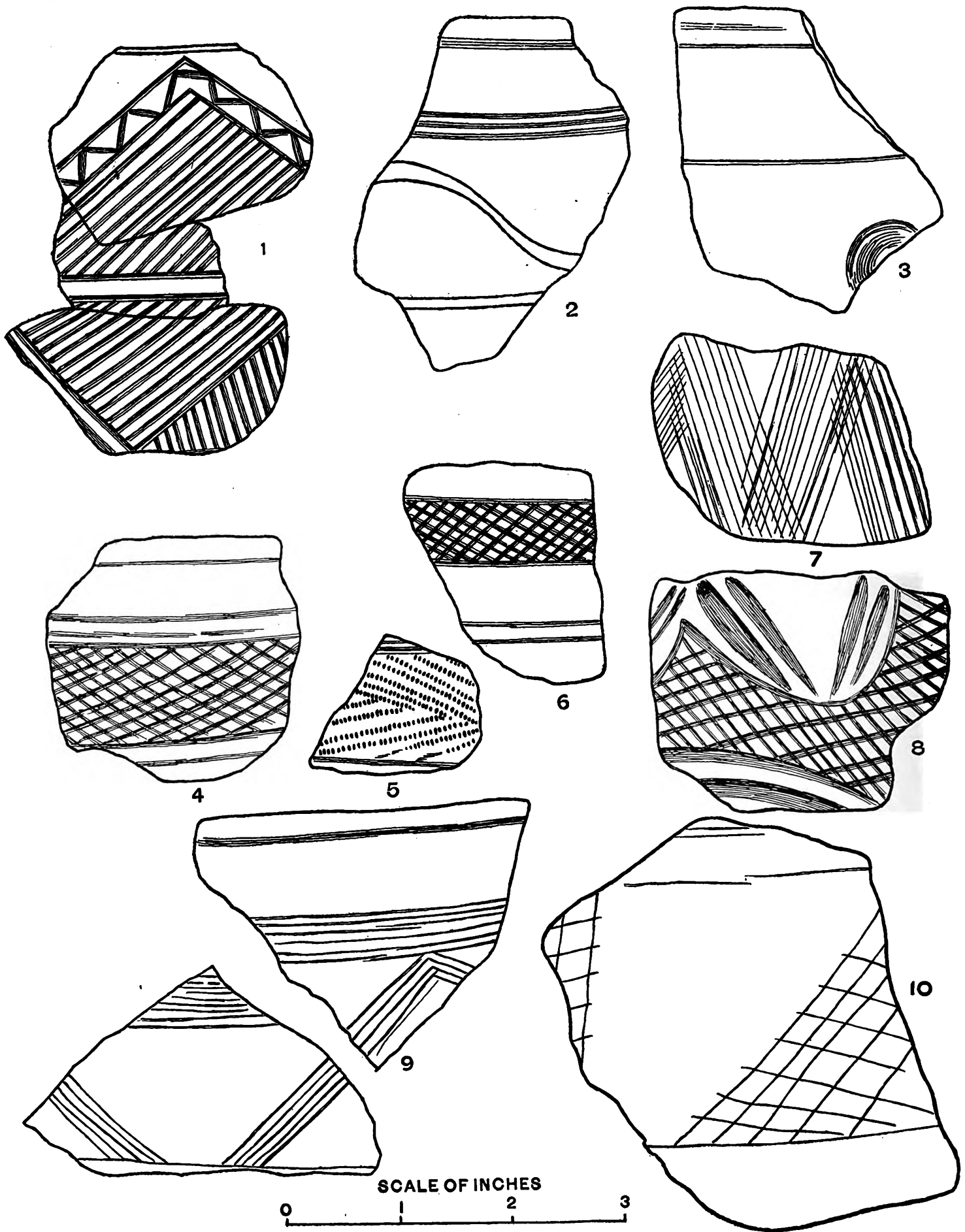


Fig. 13. Pottery fragments from Wookey-Hole.

elegant design, the decoration of which was impressed with a tool which is amongst our finds and with which we have carried out identical decoration on soft clay; the upper half, including the decoration, is in one piece. No. 9 is a small water-bottle, the only one of the type discovered so far, made for suspension by a cord handle. No. 6 is certainly a drinking-cup, of which we have another specimen, with the pattern at the top: in each case the base is decorated with a six-rayed star. No. 7 of the same figure and no. 5 of fig. 13 are of interest from the fact that the decoration has been impressed with a toothed wheel after the fashion of a milling tool, and in the former case accidentally carried too far, leaving an imprint on the neck. Fig. 12, no. 8 is a cordoned vessel, a type not common in the cave. Fig. 13, no. 2, and fig. 11, no. 2 are instances of scroll decoration practically identical with specimens from Glastonbury lake-village. Fig. 11, no. 4 is of fine black ware of a form allied to an urn with longer pedestal, from Shoebury in Essex, now in the British Museum. No. 7 of the same figure is ornamented irregularly with a series of stabs, the groupings of which, we are convinced, are not the result of chance. Some fragments of the vessel are still missing, but those found already show that certain arrangements of the dots are repeated. It is crudely hand-moulded, and probably early in date, being found in a deep fissure among the boulders 85 ft. from the doorway on the western side (marked x on fig. 1). Fig. 11, no. 9 is a vessel of similar form, and is the most heavily decorated of any yet found. No. 8 of the same figure is one of the largest urns; and to show how these things were scattered after breaking up, it should be stated that portions of this vessel were found nearly 50 ft. apart, but fitting perfectly together.

Specimens of a large number of decorated fragments are included in fig. 13; amongst them the elaborate triangle pattern of fig. 1, the finger-impress pattern of fig. 3, the bold decoration of fig. 8, and the lightly scratched lattice-work of fig. 10, are noticeable. Amongst the plain fragments are portions of huge moulded vessels of crude workmanship, one nearly 1 in. in thickness, and over 2 ft. in diameter at the mouth. In the manufacture of these, clay was used with a free admixture of grit and stones, of which some were upwards of 1 in. across. A vessel of this type, but much smaller, was commonly used for boiling, and many fragments bear traces of soot outside.

Wood. Wood decays very rapidly in the cave, but in some very dry parts certain articles were fairly well preserved. In each case this appears to have been due to a deposit of goat's dung in what we have named 'the goat's stable'. Several feet of this substance had accumulated in a dry corner, and finding its way into surrounding cavities, had enveloped these objects and in some way preserved them. They consist of two bowls of wood, apparently oak, which has become as light as cork and very fragile, a spade or shovel blade, portions of a lathe and spindle, and a double wedge. One of the wooden bowls was 7 in. in diameter, with a shaped and flattened base. It had first been trimmed with a knife, and then turned on the lathe, which did not efface all the knife marks. It is 2 in. in depth and little more than $\frac{1}{4}$ in. in average thickness. A very similar bowl, with a plain, flattened base, has the lathe marks almost obliterated by wear. Both were found 12 ft. beneath the floor, immediately adjacent to 'the goat's stable'. From the same place we have a wooden spade or shovel measuring $10\frac{1}{2}$ in. by $8\frac{1}{2}$ in. with an average thickness of $\frac{3}{8}$ in. It is curved in section, with a rounded edge which was never shod, and the handle is broken away. The back shows marked striations from wear, and the front

still retains the cut marks of the adze or curved knife with which it was made. A piece of wood with parallel sides, with the ends shaped on an inward curve and rudely symmetrical, has in the centre of the longer side half a socket hole, suggesting that it received a rotating spindle; and we think it was probably the support of a pole lathe. A curious double wedge of wood measures $2\frac{1}{2}$ in. in length and $\frac{5}{8}$ in. in thickness, and was accompanied by a larger blunt wedge. A wooden shaft in two portions was possibly used in spinning, though it would be too large for any spindle-whorl yet found in the cave.

Leather. Deep amongst boulders near 'Hell Ladder' portions of boot-like sandals were found. There is nothing to indicate their age, but the form is that of a wide, square, toe-piece with a narrow foot and heel. Certain portions also from the deep levels are pierced with large peg-holes, but much of the leather from this source is too far decayed for either its use or shape to be determined.

Grain and Seeds. Among the fire-ash, and in the refuse on the floor of 'the goat's stable', a number of charred seeds occurred, some being selected for further examination. These were submitted to Mr. Clement Reid of the Geological Survey, who identified acorns, beans, peas, and wheat. In addition to these, smaller seeds have been observed, and also portions of bracken root, which may have been an article of food.¹ In some burned food-stuff, probably bread, grains of imperfectly ground wheat were observed.

Animal Remains. Bones were abundant throughout the excavation, being in practically every instance broken to obtain the marrow, and sometimes gnawed by the domestic dogs. The principal food-animal was *Bos longifrons*; then, in about equal proportions, *Sus scrofa* and *Capra hircus*. A list of the animal remains found is appended, but more may subsequently be added:—

DOMESTIC ANIMALS.

Bos longifrons (Celtic shorthorn)
Canis familiaris (dog)
Capra hircus (goat)
Equus caballus (horse)
Ovis aries (sheep)
Sus scrofa (pig)

WILD ANIMALS.

Arvicola amphibius (vole)
Canis lupus? (wolf)
Canis vulpes (fox)
Cervus capreolus (roe-deer)
Cervus elaphus (red-deer)
Erinaceus europaeus (hedgehog)
Felis catus ferus (wild cat)
Lepus? *timidus* (hare)
Meles taxus (badger)
Rhinolophus sp. (bat)
Sus scrofa ferus (wild boar)

Remains of birds have been submitted to Mr. E. T. Newton, F.R.S., who has kindly named them as follows:—

DOMESTIC BIRDS.

Fowl
 Large Goose (? domestic)

WILD BIRDS.

Grey Goose	Crane
Barnacle Goose	Capercaillie
Duck (Mallard?)	Blackbird?
Rook or Crow	Pigeon (Rock-Dove or Domestic)
Jackdaw	
Kestrel	

¹ Evans, *Stone Implements*, 2nd ed., 250.

CAVE-DWELLING AT WOOKEY-HOLE, SOMERSET 591

Molluscs. These have occurred sparsely scattered through the workings, and include the following genera: Cardium, Helix, Mytilus, Ostrea, Patella, Pecten, Sepia. Such shells were used in the manufacture of some classes of pottery found in the lower deposits, and may in the first place have been brought from the coast as food. We noted a similar occurrence not long since in a little cave at Ebbor, associated with neolithic remains.

Roman Coins. These may be taken as affording some indication of the rate of accumulation of the débris on the floor of the cave. The period which they cover will be seen by the following list, and if we exclude the denarius of Marcia, which belongs to a period before the Roman occupation, we find a period of 320 years represented. During this lengthy time the depth of the débris increased only by six inches. When it is borne in mind that the coin of Marcia occurred as nearly as possible three inches below the Roman level, and indicated the deposits of nearly two more centuries, the rate of increase is seen to be regular, if the coin was some time in circulation.

The identification of the following coins has been confirmed by the British Museum authorities:—

NAME AND MINT IF KNOWN.	SILVER.	FIRST BRASS.	SECOND BRASS.	THIRD BRASS.
Marcia (B.C. 124)	I			
Vespasian } Titus }		I		
Trajan (Colonial)		I		
Hadrian		2		
Antoninus Pius		I		
Gallienus	I			I
Gallienus } Salonina }				I
Victorinus				I
Carausius			I	
Constantius (Lugdunum)			I	I
Constantinopolis (Lugdunum)				2
Crispus (Rome)				I
Constantine II				I
Magnentius { Rome } { Treviri } { British }			3	
Constantine II (Siscia)				4
Valentinian I { Aquileia } { Siscia } { Thessalonica } { Arles } { Rome }				20

592 CAVE-DWELLING AT WOOKEY-HOLE, SOMERSET

NAME AND MINT IF KNOWN.	SILVER.	FIRST BRASS.	SECOND BRASS.	THIRD BRASS.
Valens { Aquileia Arles Rome }				13
Gratian { Aquileia Arles Lugdunum Siscia }				15
Valentinian II (Lugdunum)				3
Indecipherable		2		4
Scrupulus (one British imitation)				
Totals	2	7	5	67

XXVII.—*Lake-dwellings in Holderness, Yorks., discovered by THOS. BOYNTON, Esq., F.S.A., 1880-1. By REGINALD A. SMITH, Esq., F.S.A.*

Read 15th June, 1911.

THE Holderness district is a vast accumulation of the great Northern Drift, a thick deposit of clay and gravel, with scratched and striated boulders of Scandinavian and other rocks marked by the grinding and drifting of glaciers and icebergs. This Northern Drift rested on the ancient surface of the chalk when that surface sloped from the Wolds, 600 ft. high, to 60 ft. and more below the sea-level. The vast bay that formerly extended from Flamborough Head to Spurn Point thus received the ice-sheets of the Glacial period, which in melting deposited débris frozen into their mass. There was thus formed an irregular crescentic area, 40 miles long and 20 miles in maximum breadth, reaching the foot of the Wolds which was then the seashore with creeks running inland. The tract rarely rises more than 30 ft. above the sea; and the natural drainage, on account of the slope of the drift, is from the seashore towards the centre line of the drift area. The surface drainage from the Wolds also tends to the same line of outflow. In ancient times the outlets of this drainage into the sea would have been higher, as the strata rise seaward; and consequently more water would have been penned up in the prehistoric lakes, and a larger proportion of the area flooded, than would now be possible, since the waste of land by the sea, at the rate of nearly two yards a year, has been going on for many centuries.¹

Until comparatively recently the lower parts of Holderness were covered by inland lakes connected with one another, and ramifying in every direction. The creation of an extensive drainage system has run off the water, and marsh and bog have given place to a most productive soil. An example of these old fresh-water lakes remains in Hornsea Mere, about one mile from the shore. It is about $1\frac{1}{2}$ miles in length, and its deeper parts are below the sea-level, but there are not improbably crannogs in it, islands adapted for habitation. Another lake at Skipsea originally extended to a point now covered by the sea, and was an important fishing property in the thirteenth century.² At present it can be traced in the cliff-section as a hollow in the surrounding glacial clay. It is characterized

¹ From an article in the *Standard*, 20 October, 1883; Clement Reid, *Geology of Holderness*, cap. i.

² Inquisition at Waghen, 1288: Poulson, *History and Antiquities of Holderness*, pt. ii, p. 445.

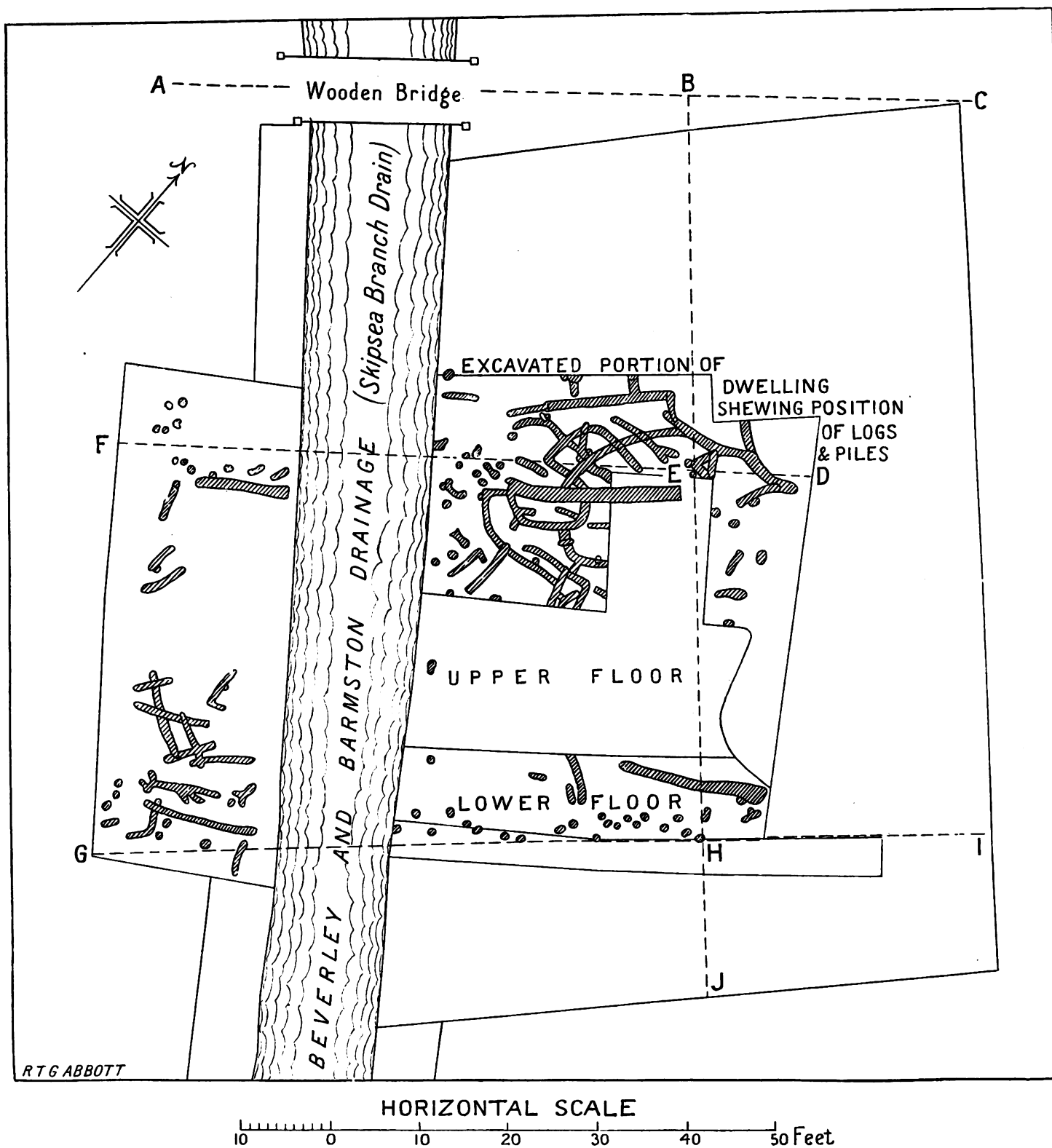


Fig. 1. Ulrome Lake-dwelling. Plan of West Furze.

by thick beds of peat which fill up the hollow, and are in places purely carbonaceous, proving that the influx of water with earthy matter in solution was of comparatively rare occurrence.¹ The former lacustrine condition of this area is further shown by the repeated occurrence of the terms 'carr' and 'mere'; and a parallel has been drawn with the present Broad of Norfolk, though Hornsea Mere, a broad sheet of water $1\frac{1}{2}$ miles long, is to-day the only remnant of the Holderness lakes.

The discovery of ancient habitations in this network of lakes was due in the first instance to the observation of Mr. Boynton, F.S.A., who followed up the clue

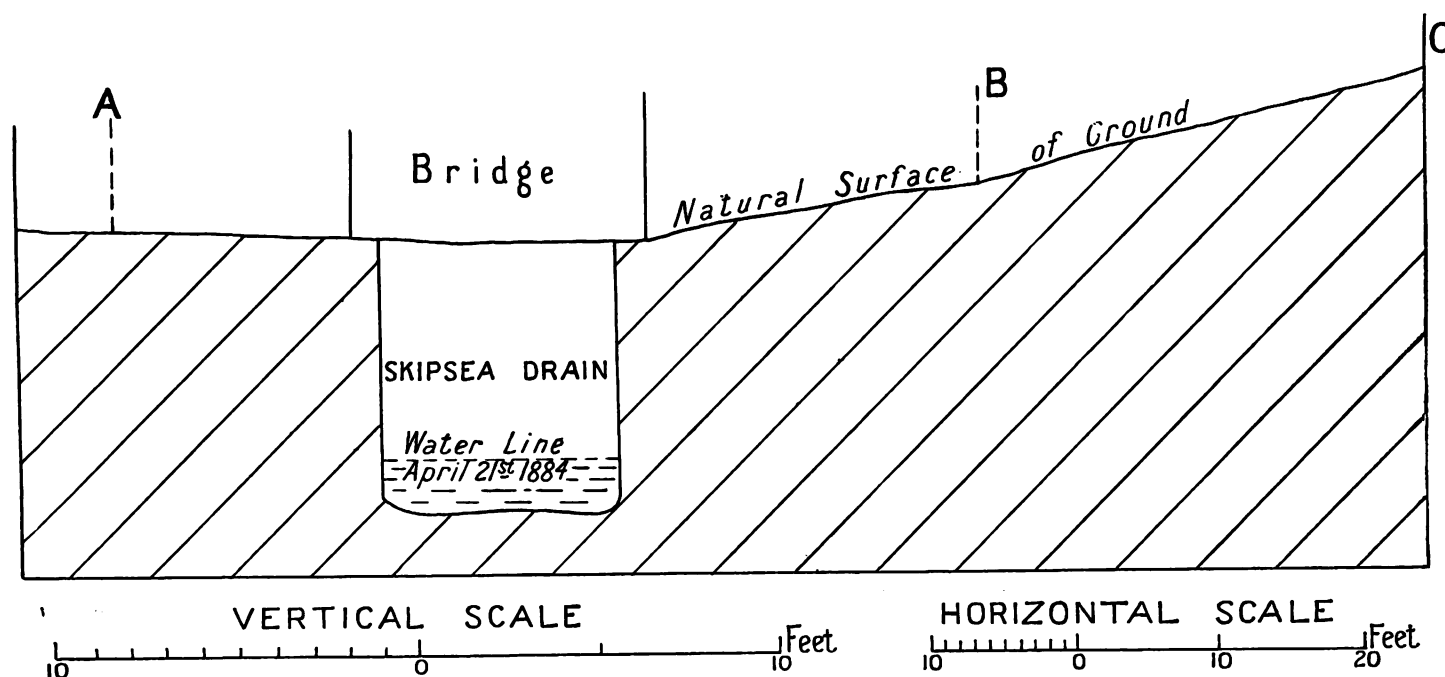


Fig. 2 Ulrome Lake-dwelling. Section A-C.

with praiseworthy thoroughness and eminent success. One of the main drains of this region, which date from about 1800, flows from Skipsea north-west to join the Barmston main drain, about one mile north-west of Ulrome; and about three-quarters of a mile due west of that village, in a field called West Furze, the discovery was made. For about eight hundred yards south of the junction with Barmston drain the original water channel was comparatively narrow, and when the Skipsea drain was being cleaned and deepened in 1880, Mr. Boynton, one of the Drainage Commissioners, noticed a number of oak piles and bone implements that had been thrown out on the bank by the workmen. Subsequently a systematic exploration of the site was undertaken, and resulted in the excavation

¹ These notes are from the *Yorkshire Post*, 26 July, 1883.

of two ancient lake-dwellings, or rather platforms for huts, one above the other, and evidently of different dates (figs. 1-5, and pl. LXXX).

It will be convenient first to describe the various strata in the order of discovery, from the surface down to the original gravel-bottom, and then to reconstruct the platforms ideally, and so gain some insight into the sequence of events on this particular site. An excavation was made first on one bank of the drain, and then on the other, and the original cutting of the drain was found to have been made through the structure. Below the surface soil a considerable thickness of peat was discovered; and at a depth of about 3 ft. the workmen came upon a level surface of brushwood and bark forming an excellent platform. Beneath this were large trunks of trees with their branches laid horizontally, and arranged more or less in accordance with the square outline of the platform. The trees

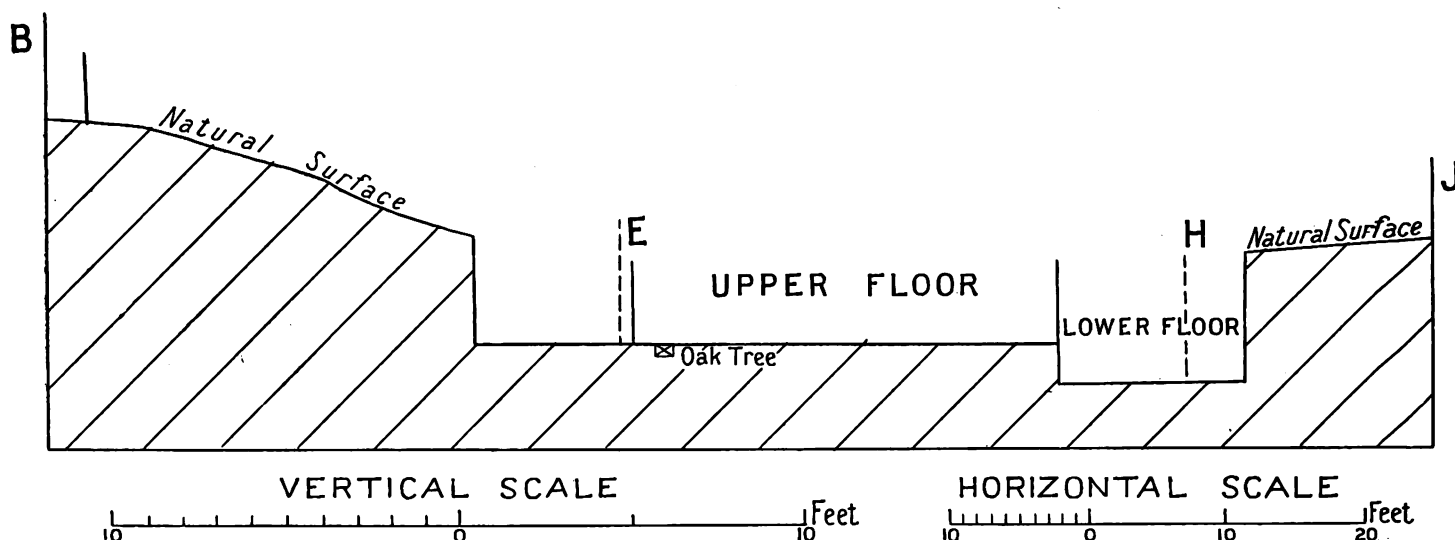


Fig. 3. Ulrome Lake-dwelling. Section B-J.

consisted of oak, willow, birch, ash, hazel, and alder, some of the trunks being 15 or 18 in. in diameter, and as many feet in length. All had evidently been cut down, but not squared. Here and there in the upper structure stood upright small piles or stakes, principally of oak, and 3 or 4 in. in diameter, which had been driven in between the tree-trunks to fix and hold them together; whilst some of those at the outer edges, especially on the north, were placed in a sloping position like buttresses, to give greater security to the structure. There were two straight rows of blunt-pointed stakes on the north side of the timber dam, and a single row on the south side, facing up-stream. The trees had been laid upon a deeper layer of brushwood which rested on the peaty bed of the lake, 2 ft. more of peat intervening before the original gravelly bottom was reached.¹

¹ T. M. Evans, 'The Ancient Britons and the Lake-dwelling at Ulrome in Holderness' (*Hull Quarterly and East Riding Portfolio*, 1885); supplemented by the *Standard*, 20 October, 1883.

The whole area of the structure was exposed, and its dimensions found to be 50 ft. north and south by 72 ft. east and west across stream, the gravel bed

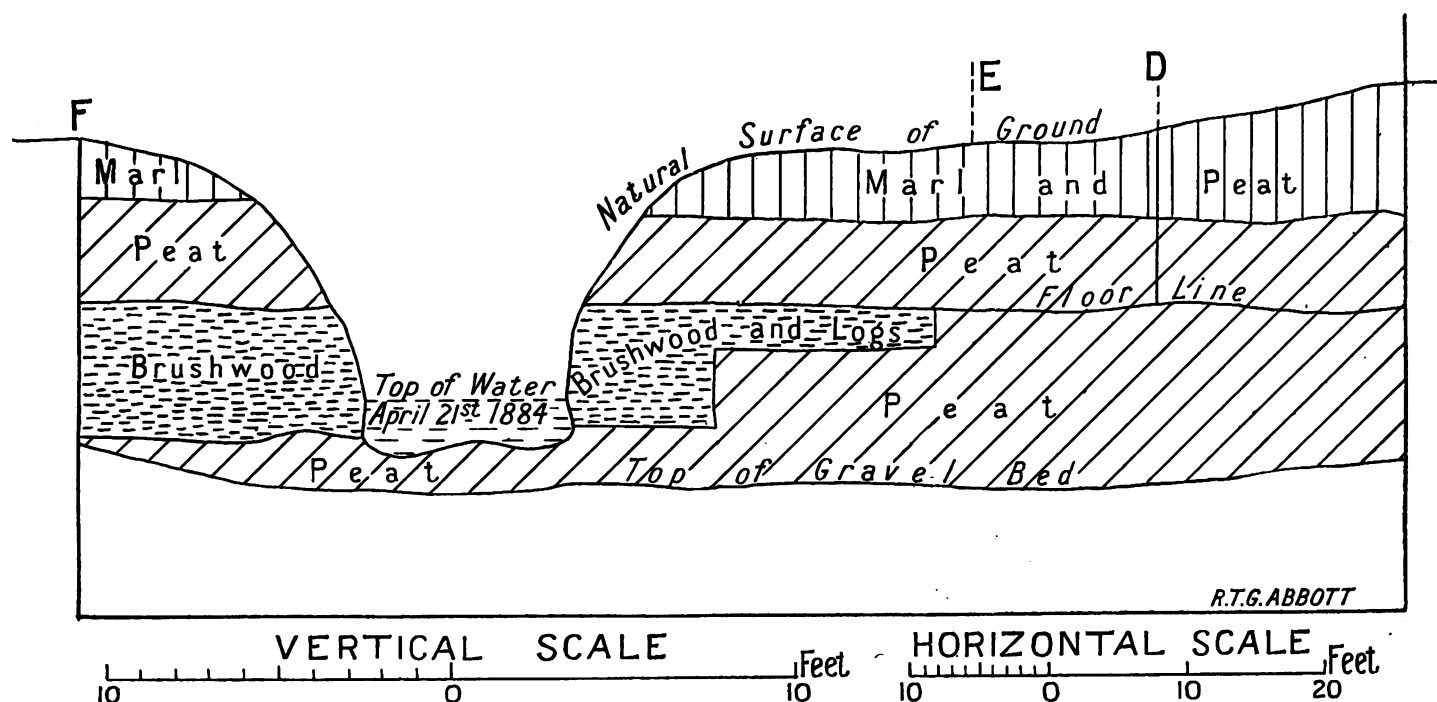


Fig. 4. Ulrome Lake-dwelling. Section F-D.

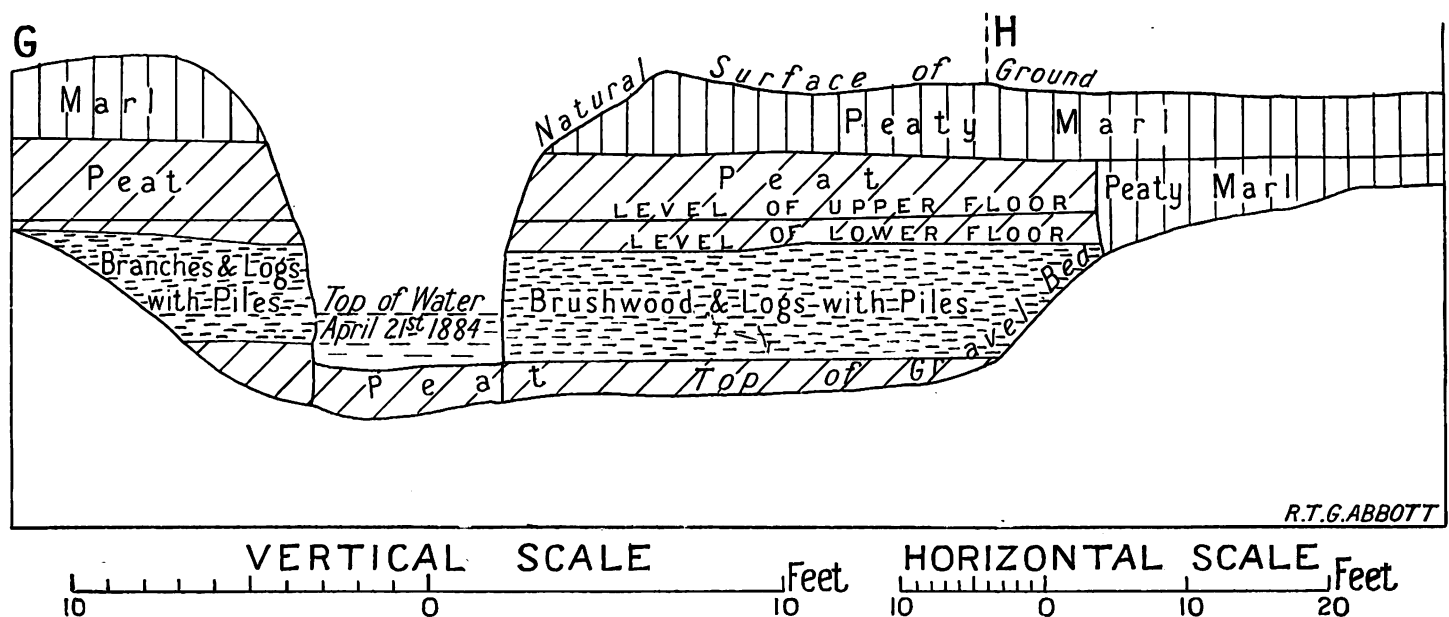


Fig. 5. Ulrome Lake-dwelling. Section G-I.

being about 9 ft. below the surface level. In historical sequence, the various stages have been described by Mr. Boynton¹ as follows:—‘A structure was

¹ Quoted in the *Yorkshire Post*, 26 July, 1883.

erected on the edge of the lake with rising ground east and west. The bed of the lake was composed of sandy gravel, above which about 2 ft. of peat had been deposited. On this the builders placed first brushwood, and then, at a later date, tree-trunks, which crossed each other horizontally, and for the most part without any definite arrangement. They were fastened in position by pointed piles, and the interstices were filled in with broken wood and twigs to the depth of a foot or more until a level surface was obtained, and the whole was then strewn with sand. On this solid surface there was placed an additional thickness of about 18 in. of broken twigs and bark, and on this foundation, which probably reached a little above the water level, were erected the dwellings of the builders. Since the demolition of the buildings there had accumulated about 3 ft. of peat and peaty marl; and above this was more than a foot of warp and surface soil.'

One side of the platform, furnished with extra piling, appears to have reached the land at either end, thus connecting it with both shores of the narrow waters. The strengthening of this side consisted of sharpened upright piles in two rows 5 ft. apart; two of these, higher than the others, and placed opposite one another, may have served as a wicket or narrow entrance at the south-east corner of the platform, which was about 18 in. lower. The wicket was situated at the extreme eastern point of the excavated area (fig. 1) and there was communication with the land on the south-east side. The excavation made for a distance of 12-15 yd. along this side brought to light flints and other stones, some pottery, and human skulls. Of the last named, two passed into the possession of Canon Greenwell; and a third, found with the teeth within the main structure, near its south-west angle, will pass into the national collection with the rest of Mr. Boynton's gift. It is stated by Dr. Keith, Curator of the Museum of the Royal College of Surgeons, to be of the River-bed type, as found by Huxley¹ in Caithness and elsewhere; and is apparently of the male sex. Our Fellow Dr. Wm. Wright recognizes in it one of the four leading types of Bronze Age skulls as found in barrows on the Wolds.

The bone tools thrown out when the drain was cleaned were evidently used as adzes, possibly to cut out the burnt interior of tree-trunks in order to make canoes. They are made from the distal ends of the right and left radius of the ox (fig. 6), the perforations being circular, with diameters between 0.6 and 0.9 in. The present average length is $6\frac{1}{4}$ in., but the smaller end is in all cases more or less damaged. One tool of the same character, 9 in. long, is made of the proximal end of the humerus of an ox, not so well adapted for perforation, and another axe from the articular end of the left scapula of an ox, the length being 5.4 in.

Perforated tools were generally made of red-deer antler, and the adzes

¹ Laing and Huxley, *Prehistoric Remains of Caithness*; *Archaeologia*, lx. 313, with refs.

typical of this site appear to be exceptional. Dr. Corner has a specimen found in the Thames at Hammersmith practically identical with the largest from Ulrome, with the cancellous portion hollowed out evidently for the insertion of a stone celt. Some of the Ulrome bones seem to have been used for this purpose, but others may have had a cutting-edge produced by a sloping cut. Several are much rubbed and polished by constant use. Another parallel seems to be a

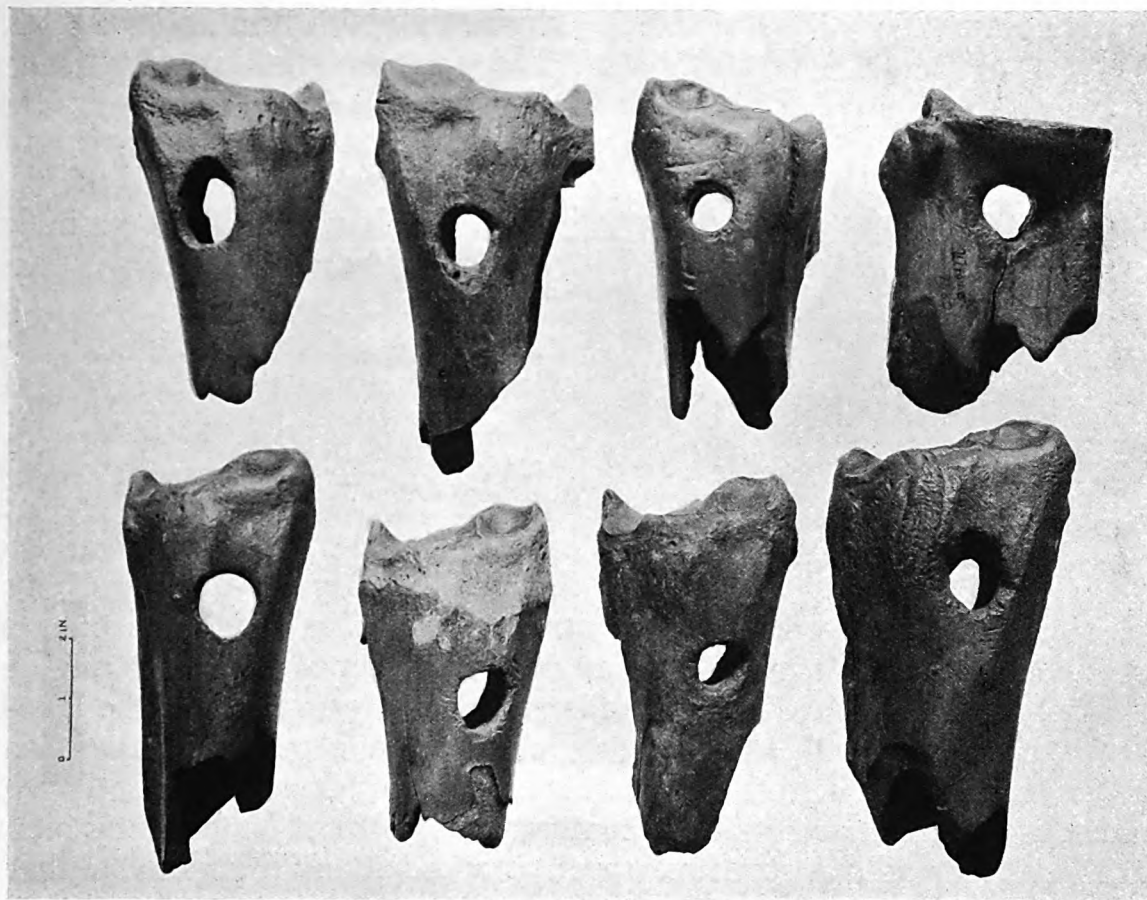


Fig. 6. Bone adze-heads, West Furze Lake-dwelling. Nearly $\frac{1}{2}$.

group of six in the Museum of Antiquities at Edinburgh (*Cat.*, p. 244, HA. 36), from Skerrabrae, Skaill, Orkney.

The flints found with the bone tools are rough lumps, not shaped for any definite purpose, averaging 5 in. by 4 in., and mostly of deep black quality with white crust. Many of the edges are battered, but there is no proof of use as hammer-stones. The other stones consist of grit and quartzite pebbles from the glacial drift,¹ used in various ways, and ranging from 3 in. to $5\frac{1}{2}$ in. in length: some

¹ One lump shows two series of striations.

are bruised at the end by use as hammers, and one is pitted on one face, apparently by use as an anvil-stone for the flaking of flint nodules.¹ A rubbing-stone for reducing grain to meal has one flat face 12 in. by 7 in.: the material is igneous rock.

The pottery urn (fig. 7) now restored is a plain but interesting vessel, curving in at the lip, and made without the wheel. It measures 7.7 in. in height, and has



Fig. 7. Urn of plain brown ware, West Furze Lake-dwelling. $\frac{1}{4}$.

a maximum diameter of $12\frac{1}{4}$ in., the diameter inside the lip being $10\frac{3}{4}$ in. The ware is light brown with a reddish core, the rather soft paste being sparsely mixed with large grit, and the surface pitted by some substance (not grain) that has been burnt out in firing.

There were reasons for supposing that the structure was not all of the same date, and the position of the earlier or lower platform could be determined with some precision. In the photograph (pl. LXXX) Mr. Boynton may be seen standing on the upper platform; and that there was a considerable interval of time between

them is shown in an interesting way by the manner in which the piles were prepared. At the beginning of the excavation a number of piles were dug out of the bottom of the drain where they had been originally driven into the lake-bed, and it was noticed that they had been sharpened in a very primitive fashion. The lower end had been trimmed rather than pointed, and evidently with a stone adze, as the concave cuts were comparatively short. In fact the stone tool seems to have been used as a wedge as well as an adze, and it is possible that the extremity of the pile was first reduced by burning.

The upper piles, on the contrary, had been sharply pointed with a metal axe used vertically in the right hand, and from the associated relics it is practically certain that the metal used was bronze. In some instances the sharp points had been driven into the top of the older piles which had decayed, another argument in favour of two dates for the structure. As might be expected from the difficulty of felling and trimming trees with stone axes, the earlier platform was seen to contain less timber than the upper one, which appeared to have extended somewhat beyond the limits of the platform below.

¹ Similar pitted stones from a neolithic workshop floor in Aberdeenshire are exhibited in the prehistoric section of the Glasgow Exhibition this year.

The efficiency of the stone axe was tested in 1878 by the erection of a log-hut in the presence of several Danish archaeologists, the timbers being prepared without the use of metal.¹ The effect of a stone celt on timber has since been discussed and illustrated abroad² as well as in Britain, so that there can be little hesitation in deciding whether a given piece of wood has been worked with a stone or bronze tool. At Ulrome the water had preserved the shape (though not the solidity) of the piles to such an extent that the axe-marks were plainly visible, and the accompanying photograph (fig. 8) shows a specimen brought to a rough point by means of a bronze tool.

Similar tool-marks on piles have been described by Mr. Ludovic Mann,³ who excavated a number of pit-dwellings in Galloway that had floors constructed of closely-set piles. The timbers chiefly employed were birch and alder, and the

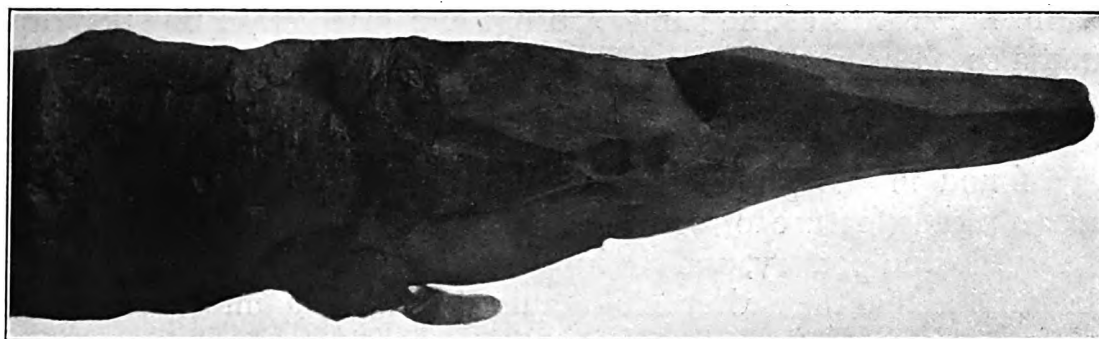


Fig. 8. Pile pointed by means of a bronze tool: Ulrome Lake-dwelling.

smoothness of all the cut surfaces showed that the axe had a finely polished surface and a clean, unbroken cutting-edge. The facets were of small area, and resembled the inner side of a flattish spoon. Knots had to be worked round and the harder timber was wedged off, the tool being used to split the wood from the point where the penetration ceased. The axe must have been comparatively blunt, with two convex faces, the line of intersection being a slight curve; and his conclusion is that a neolithic celt was the implement used, though a socketed bronze celt might produce cuts of a similar character. The entire absence of bronze or other metal on this site points to the earlier date, and agrees with the Ulrome evidence.

It was at first thought that the drain marked the limit of the structure on one side, but a trench driven at right angles to the drain brought to light a number

¹ N. F. B. Sehested, *Archaeologiske Undersøgelser*, 1878-81, 3.

² *Aarb. for Nord. Oldkynd. og Hist.*, 1891, 383; 1898, 125.

³ *Antiquary*, xli, 287, 291, 333. Piles in a pit-dwelling at Stoneykirk, Wigtownshire, are described with illustrations by Mr. Mann in *Proc. Soc. Ant. Scot.*, xxxvii (1902-3), 382.

of interesting relics on the south, the northern side (on the right of pl. LXXX) however proving entirely barren. In the marl, at a depth of 15 in. from the surface, was found part of a Roman mortarium and a rim-fragment of another.¹ Other finds are of the period just preceding the Roman occupation, and consist of a countersunk handle² from the shoulder of a vessel of grey-brown ware, black outside; and part of the foot-rim of a vase, a half-round moulding projecting beyond the base as in many Late-Celtic specimens. There were also the flat base of a vessel $6\frac{1}{2}$ in. across, the ware black outside, and pale brown inside; parts of a large vessel or vessels 0.7 in. thick, with a pinkish brown coating without, the core and inside surface being black; and several lips of vessels, everted and squared, without any mouldings. There were also one piece of rouge and part of a jet ring too small for a bracelet. It is on the average $\frac{1}{2}$ in. wide, and the inside and outside diameters would have been 1.9 in. and 2.5 in. respectively.

On the north side of the same cutting, and just within the pile-dwelling, was found a small heap of chipped flints, evidently the refuse of a workshop on this spot. They are unpatinated, and all appear to be unused except two pieces that have served as end-scrapers or planes. They present a marked contrast to the series found in the pit south-east of the lake-dwelling described below. The most striking feature of their distribution is that the lower part of the structure yielded no pottery, and the upper part no bone implements.³ Hence it may be inferred that the earlier inhabitants were unacquainted with the potter's art, and their successors had abandoned the use of bone implements in favour of metal. The only specimen of metal, however, that came to light was a socketed lance-head of ordinary form, containing fragments of its wooden shaft, and dating from the latter part of the Bronze Age; and it must be concluded either that metal was extremely rare in this locality, and consequently preserved with extreme care, or that the second occupation of the site was of short duration. The lance-head was found at the end of the large oak-tree seen in the middle of pl. LXXX; it was in very fragile condition, but measured when complete about $4\frac{1}{2}$ in. in length, and 1.2 in. across the blade, the wooden peg to fix the shaft in the socket being still in position. The blade is leaf-shaped, the socket tapering and passing down the centre practically to the point (fig. 9).

Three pieces of red-deer antler showed traces of human work. The upper part, including the cup and points and the trez tine, had evidently been sawn

¹ A Roman house with a maze-pattern pavement has been discovered at Harpham, five miles north-west of this site (*Proceedings*, xx. 215).

² Like that figured in *Proceedings*, xxiii. 128.

³ The bone tools were found to the west of the structure in the drain and on the opposite bank before systematic excavation began. One vertebra of an ox was found with traces of a shaft in the orifice and, though showing no signs of use, had evidently been a mace-head.

all round the beam and then snapped off. Another tool, resembling the miner's pick of the neolithic period, consisted of a beam $17\frac{1}{2}$ in. long with the trez tine snapped off, and the bez used as the head; and there was also found a pick-head made of the brow tine with the burr attached.

The animal bones collected have been examined by my colleague, Dr. Andrews, F.R.S., and a selection made for the Natural History Museum. The following were the species represented:—

1. DOG. Portions of two skulls of a terrier type.
Very similar skulls are found at Silchester.
Also lower jaw of a large wolf-like breed.
2. FIG. Teeth and portions of bones.
3. RED-DEER. Numerous portions of antlers, one indicating an animal of large size.
4. SHEEP. Bones of a very small breed, like the Soa-sheep.
5. OX. Numerous portions of jaws, teeth, and limb-bones. Two forms are represented:—
(1) A small shorthorn (*Bos longifrons*) with much compressed horn cores: the bulk of the specimens belong to this type.
(2) A large animal represented by bones which have been employed as axe- or pick-heads, nearly all of which are made from the distal end of the radius of this form. Some individuals were as large as most of the Pleistocene specimens referred to *Bos primigenius*. Possibly the small shorthorn was domesticated, the large species wild.
6. REINDEER. Represented by the lower part of an antler—this specimen is in quite a different condition from the others, and probably is from an older deposit.
7. HORSE. Parts of a skull and a number of bones of a rather small breed. One individual seems to have attained extreme old age.
8. BEAVER. Jaws and limb-bones.
9. CORMORANT (*Phalacrocorax carbo*). Wing-bones.
10. WILD DUCK (*Anas boschas*). Wing-bones.

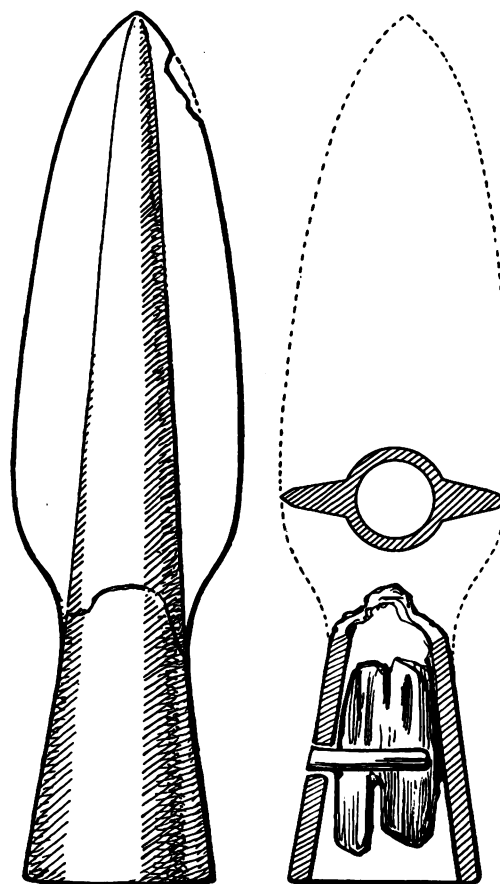


Fig. 9. Bronze spear-head, with wooden peg, West Furze Lake-dwelling. §.

The presence of the reindeer in this part of Britain during neolithic times is questioned by Dr. Andrews, but it may be mentioned that in the peat of Newbury, where pile dwellings have been found, is thought to have occurred part of a reindeer's antler, dark in colour, and bored through in two places. The

discovery has been brought into question,¹ but is worth consideration in the light of the Ulrome specimen.

About 20 yards south-east of the West Furze lake-dwelling Mr. Boynton came upon an ancient pit which he excavated with interesting results, though it cannot be said to throw any light on the date of the adjoining structure. It was approximately 30 ft. long, and 8 ft. wide at the bottom, but not easily distinguishable from the surrounding soil as it had been gradually filled up with sand and peat. In



Fig. 10. Pottery urn from pit, West Furze. $\frac{1}{8}$.

it was found a human skull with the bones of one hand, and a large urn in pieces, presented to the British Museum by Mr. Boynton in 1904, and now restored (fig. 10). It is of oval form, 26 in. in height, with a high shoulder, and a maximum girth of $6\frac{1}{4}$ ft. The lip is curved outwards, and the whole is a remarkable example of potting without the wheel, the ware being black and pitted by some substance that disappeared in firing. A number of flints came to light here showing a considerable variety of patination on both worked and unworked specimens. About half the total showed secondary chipping, and included four cores, blades, scrapers,

¹ *Newbury District Field Club*, 1886-95, 210.

a borer, and one 'burin', closely resembling a graving-tool of the palaeolithic cave-period. At a higher level were found a few pieces of Roman ware—part of the rim of a large grey-ware urn, and part of the rim and bottom of a mortarium, with the characteristic grit added to facilitate trituration. Between fifteen and eighteen inches from the surface were many fragments of typical mediaeval pottery, red ware with yellow or green glaze.

The Round Hill lake-dwelling at Ulrome was discovered on the east bank of the Skipsea drain, about midway between West Furze and Skipsea, and about 5 furlongs north of the junction of the east and west branches of that drain. The site was investigated by Mr. Boynton in 1885, and the construction was found to be inferior to that of the West Furze settlement. The logs were not made to overlap, but thrown in promiscuously, and though some were of large dimensions there was no attempt to render the structure solid by means of piles, except in one case where a pile 4 in. in diameter had been driven into a log twice the

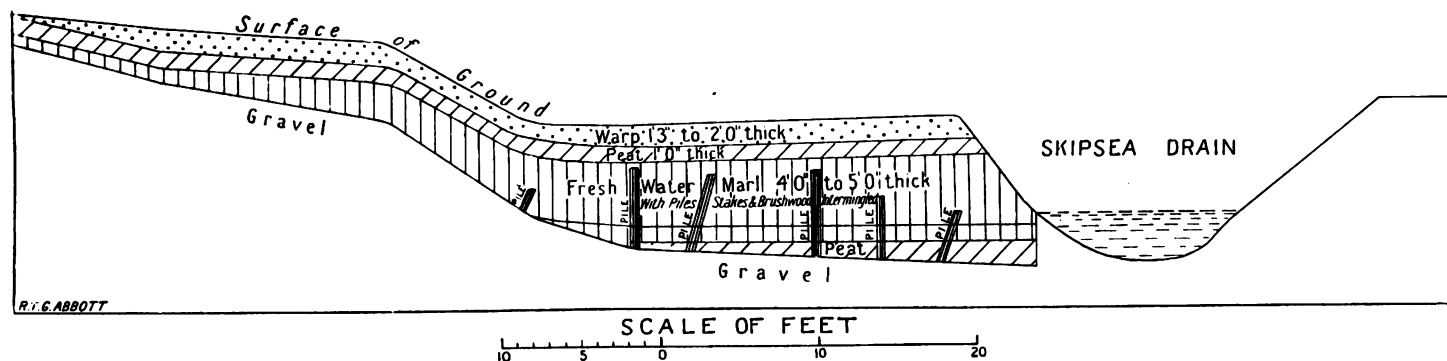


Fig. 11. Ulrome Lake-dwelling. Section of Round Hill.

thickness without splitting it. This indicates that the larger log had been in position long enough to be softened by decomposition before the pile was driven into it. The wood used was in most cases easily identified as oak, ash, elm, willow, sallow, Scots pine, alder, birch, crab, hazel, whin (furze), and thorn. A considerable amount of bark had been beaten in among the sticks to form a compact mass, which was supported on the north and south sides by buttresses. In a trench dug 7 ft.-11 ft. deep on the south side was found a piece of oak $3\frac{1}{2}$ ft. long, 1 ft. broad, and about 1 in. thick, that was completely charred on one side. Near it were several flint flakes and pieces of animal bones, all resting on the original lake bottom. On the north side the trench was 16 ft. deep, and shells of the fresh-water mussel were found in some quantity on the bottom. The woodwork and piles reached a depth of $12\frac{1}{2}$ ft. (fig. 11); and near the edge of the structure on this side was found part of a human skull at a depth of 4 ft.

The principal traffic appeared to have been on the south side, and the connexion with the north side must have been merely temporary, as there was no

evidence of a pathway. It was there, however, that part of a jet armlet (fig. 12) was found about 3 ft. below the surface. Much more charred wood was noticed on this site than at West Furze, and in one spot flint flakes were so plentiful that seventy were counted in one spadeful of earth. Certain mosses,¹ too, that grow on trees were also well represented, being possibly used as tinder for striking fire; and it was observed that there were no marks of a stone axe on the logs or piles of this structure. Other finds from this lake-dwelling include a stone celt 3.1 in. long, and 2.4 in. across, with the butt and cutting-edge chipped in use, but otherwise polished all over; and part of a circular mace-head, somewhat roughly shaped, with a diameter of 2.8 in. and depth of 1.6 in., the 'hour-glass' perforation being 0.8-0.9 in. in diameter. There were also rough lumps of flint, some with sharp edges as though used as cores, and an unshaped piece of jet, such as occurs on the Yorkshire coast. Fragments of a vessel about 7 in. high, with a diameter of 9½ in., are

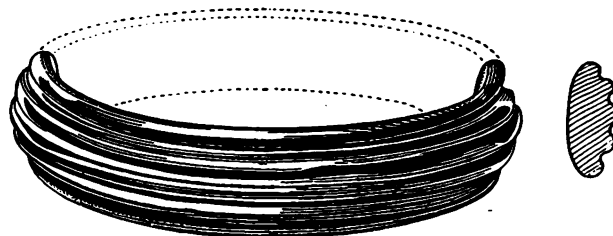


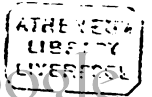
Fig. 12. Jet armlet, Round Hill Lake-dwelling. $\frac{3}{4}$.

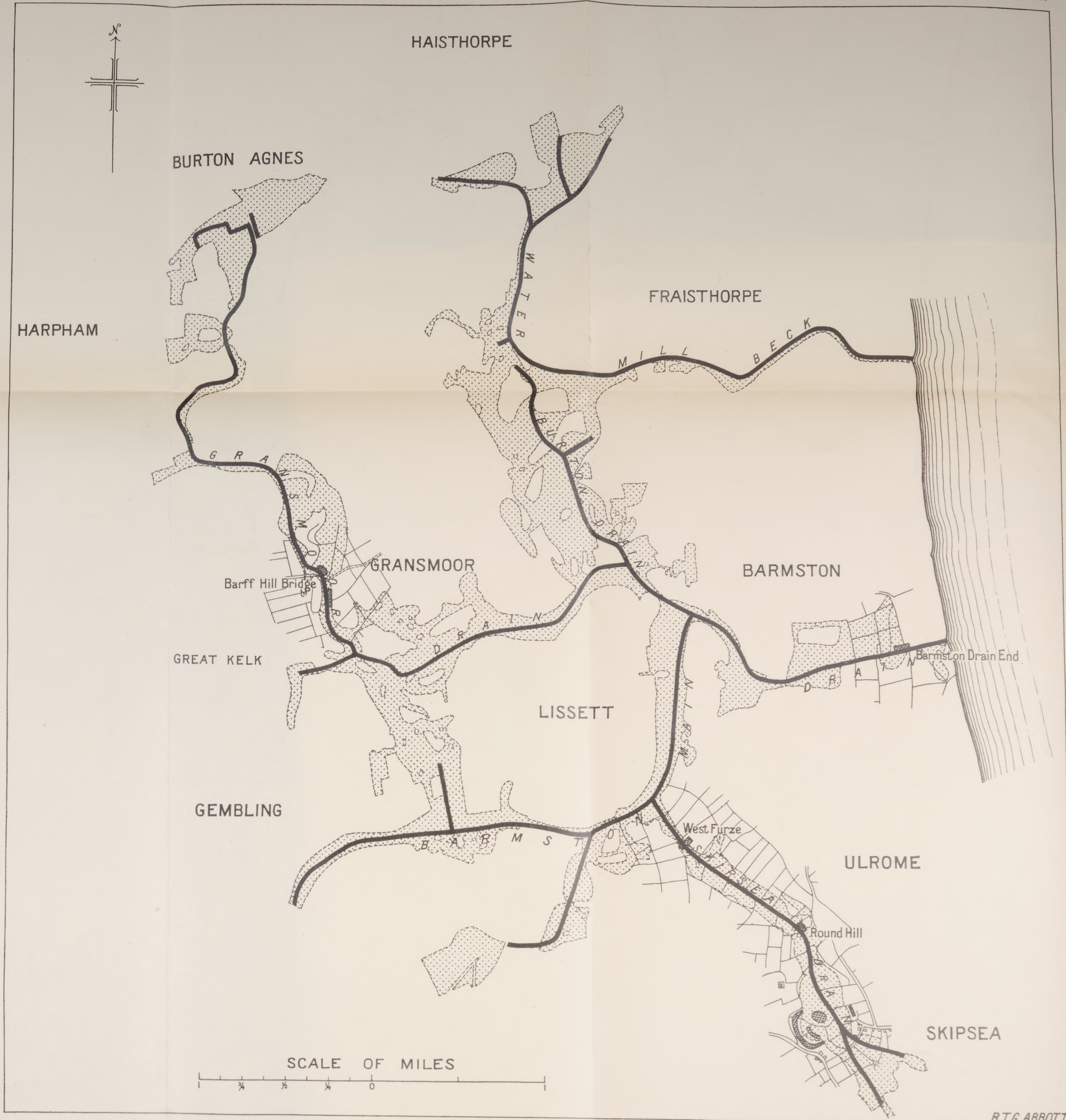
of black ware with a greyish yellow facing, the profile being not unlike the larger and perfect urn from West Furze (fig. 7).

Whereas at West Furze the upper platform extended beyond the lower, at the Round Hill the upper layer was of smaller area. Both sites had been abandoned, and nothing of any value left behind; there was no sign of any sudden panic nor of a conflagration, though charcoal was plentiful in both excavations.

In some respects the Round Hill site resembled the upper part of West Furze, and was a good example of the early practice of selecting a spot with sandy soil close to an island or peninsula, or between two of these. The settlement would thus be protected by water or marsh from wild animals, and the adjoining pasture for domestic animals would be surrounded by a palisade. From the nature of the case it is difficult to excavate such sites, but a settlement extending 200-300 yd. can still be traced by the piles visible in the drain at Gransmoor, on either side of the road from Gransmoor to Great Kelk. Here, beside the Barff Hill bridge, was found a Roman vase of grey ware coated with black, 9.6 in. high, with burnished lattice pattern on the body and a lead plug to stop a hole worn in the bottom: another hole is worn in the side.

¹ *Antitrichia curtipendula* (now found near Braemar, Scotland) and *Hypnum cupressiforme* (common in temperate climates) have been identified.





R.T.G. ABBOTT

SKETCH-MAP SHOWING POSITION OF LAKE-DWELLINGS IN HOLDERNESS
(Dotted portion originally under water)

Published by the Society of Antiquaries of London, 1911

Other indications of lake-dwellings have been noted near the outfall of the Barmston main drain, about $\frac{1}{4}$ mile from the shore. Here was found a grooved and perforated stone measuring 9.5 in. by 6.9 in. that evidently served as an anchor, and weighs 10 $\frac{3}{4}$ lb. A well-made bluish-grey stone celt, 4.9 in. long, came to light here in 1883: it is of oval section, ground smooth near the cutting-edge, and pointed at the butt. Two years previously the same site produced a bone axe-head made from the distal end of the right tibia of a small Bos, the perforation being 0.5-0.7 in. in diameter through the greatest width of the bone. Part of the rim of a large Roman jar of hard grey wheel-made pottery was also found near the Horse Bridge, but whether this belonged to the lake-dwelling that seems to have existed here cannot be determined. There is also evidence for a lake-dwelling at Brunton Hill, which is near Lowthorpe station, and west of Little Kelk.

The foregoing account of excavations and discoveries has been compiled mainly from information supplied by Mr. Boynton, with whom the writer has lately visited the various sites. The work was undertaken single-handed in 1880, with a considerable expenditure of time and money, but in the following year this Society was approached by Canon Greenwell and granted £25 towards further excavation, a like sum being privately contributed by Dr. Freshfield, then Treasurer of the Society. It will be freely acknowledged that it is primarily to Mr. Boynton's enthusiasm and self-sacrifice we owe our knowledge of lake-dwellings in Yorkshire. Apart from more recent exploration at Glastonbury and Meare on sites occupied at a later period than the original habitations at Ulrome, very little has been recorded of such structures in England. Dr. Robert Munro has a short supplementary chapter in his work on *Ancient Scottish Lake-dwellings or Crannogs* (1882), and summarizes the discoveries in Holderness and Wretham Mere (Norfolk),¹ London Wall (City of London), Langorse Lake (near Brecon), and Barton Mere (Bury St. Edmund's). Crannogs or fortified islands are common in Scotland and Ireland,² but seem to belong to the Early Iron Age and later times, while the well-known pile-dwellings of Switzerland, dating in part from the neolithic period, illustrate a different and much higher civilization. There is little literature on English sites of this description,³ for the obvious reason that they are themselves of rare occurrence; and the present paper should be regarded rather as a record, however imperfect, of excavations that were in danger of oblivion, than as a treatment of the whole question. With this end in view, the conclusions are briefly presented with due regard to the dangers and difficulties of the subject, and with all the more diffidence as the writer was not an eye-witness of the exploration. Since Dr. Munro's account of British and foreign

¹ Discoveries of 1856: those of 1851 are described below.

² Col. Wood-Martin, *Lake Dwellings of Ireland*.

³ *Archaeologia*, xxxviii. 177.

lake-dwellings was published, some further light has been thrown on the subject, and a few references are given below, though they cannot be said to mark any great advance in the study.

A pile-dwelling at Pickering, beyond the Wolds, and nearly 30 miles north-west of Ulrome, has been described by Mr. J. Spink,¹ and subsequently by Hon. Cecil Duncombe.² In 1893 some coarse pottery was thrown out in clearing a stream, and in the vicinity four rows of piles were found crossing the Costa at a distance of about 100 yds. from each other. These seemed to converge on the centre of a peninsula which was thought to contain lake-dwellings; and at the foot of the piles, under 10 in. of soil, 2½ ft. of stiff blue clay and 6 ft. of peat, were found large quantities of bones and broken pottery, on the original lake bottom of Kimmeridge clay. Various animals were represented, and remains of no less than four human skeletons were found, of a short but muscular race, a woman being not more than 4 ft. 6 in. in stature, and the largest thigh-bone giving a height of not more than 5 ft.

In the neighbourhood of Newbury, Berks., pile-dwellings have been discovered⁴ that present some points of resemblance to those of Holderness. The peat of the Kennet valley has been largely exploited, and points to swampy or lacustrine conditions in prehistoric times. In 1870 a pyramidal building approached by three causeways at a depth of 15 or 16 ft. was noticed in Fence Wood, near Hermitage, but the inrush of water prevented a close examination. Underground pile-structures, consisting of unbarked oak balks roughly hewn, with cross-beams resting on vertical piles, have been found in Newbury itself. In Bartholomew Street a platform of fir-poles was met with 7 ft. from the surface. Rudely pointed stakes had been driven into the peat, and the articles found included numerous flint implements of neolithic types, as well as animal bones. A circular structure 30 ft. across was also found in digging peat near Cold Ash. The planks were 16–18 ft. long, and roughly hewn, beams crossing from side to side and resting on piles. It was approached by a kind of causeway, and was built on the borders of a morass, which has been a resort of wild fowl within the memory of man, and originally formed part of a much larger sheet of water.

The following account is extracted from a paper⁵ read at Cambridge in 1862 by Alfred Newton, Fellow of Magdalene College:—

A few miles from the town of Thetford the country is characterized by a considerable

¹ *Proc. Yorks. Geol. and Polyt. Soc.*, 1895, 21.

² *Journ. Anthropol. Institute*, N. S., i (1898), 150; and *Assoc. Archit. Soc. Reports*, xxv. 240, where Mr. Thos. Sheppard mentions a lake-dwelling at Crowland (Miller and Skertchley, *The Fenland*, 578).

³ Mr. Boynton classifies this as Roman, and regards the site as of much later occupation than Ulrome.

⁴ *Newbury District Field Club*, 1872–5, 123, 130; 1886–95, 206; *V. C. H. Berks.*, i. 193.

⁵ *On the Zoology of Ancient Europe*, published by the Cambridge Philosophical Society.

number of ponds or meres varying in size from twenty roods to fifty acres. Many of these are situated in the parishes of East and West Wretham, and one of them in the latter parish, known as West Mere, is five or six acres in extent. In 1851 it was drained by the proprietor, Mr. Birch of Wretham Hall, and below the 4 ft. of water which it usually contained, was found soft black mud about 8 ft. deep, during the removal of which a large number of bones were discovered, chiefly at the bottom. They nearly all belonged to the red-deer (*Cervus elaphus*) and the now extinct *Bos longifrons*, but among them were part of a goat's skull with the horn cores and the skull of a boar or pig. Near the centre of the mere, below the black mud, was found a ring or circular bank of fine white earth, as firm as average sea-sand when damp; and outside the ring the bottom was so soft and deep as to be almost impassable until the mud was cleared away. The ring was 20 or 30 ft. in diameter, a foot wide (evidently at the top), and about 4 ft. high; and not far from its inner face was a circular hole, about $4\frac{1}{2}$ ft. in diameter, and some six feet deeper than the bottom of the mere, having the appearance of a well, and containing mud even softer than that outside the ring. This cavity was marked out by a circle of stout stakes or small piles, apparently of alder, which bore traces of having been wattled. It was not in the centre of the ring, and between the two circles were the remains of a wall composed of flints packed together with marl or soft chalk. In the same place was some earth of a bright blue colour, which crumbled to powder on drying. In the intervening space a still greater number of bones were found as before, and also the remains of a rude ladder, which could be identified as such, but so decayed as to be incapable of removal as a whole. Its sides were about 15 in. apart, and the rungs about the same distance from one another.

The stakes appeared to have been split from trees some 4 in. in diameter, and were very hard, as heavy as stone and of a dark grey colour. The fragments of the ladder, on the contrary, were very rotten and light, but the remains of both soon perished on exposure to the air. All the skulls of *Bos longifrons*, with the exception of one unusually large specimen, showed a fracture in the forehead; and of the deer-antlers some had been shed and others sawn from the skull. The large bones had been fractured at one or both ends, but not split longitudinally. No traces of metal were found during the excavation, but a large number of flint discs were recovered that were considered sling-stones, but not illustrated or described in detail.

The largest of these Thetford meres, about 48 acres in extent, was drained in 1856, and the results described by Sir Charles Bunbury,¹ who noticed nothing of archaeological interest except numerous posts of oak, shaped and pointed by man, standing erect below the mud.

Points both of contrast and comparison are afforded by a recent discovery in Sweden.² Between Lake Wetter and Lake Tåker, near the south end of the Oenberg, at a place called Alvastra, pile-dwellings have been excavated in soil

¹ *Quarterly Journal of the Geological Society*, xii. 355, where the Wretham discovery is also briefly recorded: see *Archæologia*, xxxviii. 187. The piles are here said to have been found standing erect at a depth of 20 ft. from the surface, in peat below a deposit of peaty mud.

² *Fornvännen*, 1910, 29.

that was in prehistoric times nothing but a swamp, but is now drained and habitable. The paved floors lay under a deposit of peat, and the settlement was of considerable extent, but the part laid bare sufficed to prove that it dated from the gallery-grave (our long-barrow) period, that is, from the close of the neolithic age, and (according to Prof. Montelius) approximately from 2500 to 2000 B.C. The animal remains were of swine, cattle, sheep or goat, red- and roe-deer, marten, badger, dog, and bear. As at Ulrome, hazel-nuts had evidently been collected for food, and a stone with a hollow in one face strongly resembles that from West Furze regarded as an anvil, though this explanation is not suggested in the Swedish account. Tinder was also found as at Ulrome for use with flint and pyrites, but the pottery was ornamented in a style known from other discoveries to date from neolithic times, and to belong to the East Swedish culture, as opposed to the agricultural civilization of southern Scandinavia (Scania and Denmark). The latter group of the neolithic population had domesticated animals, whereas the people of eastern Sweden were only in the hunting and fishing stage; and it is noteworthy that pile-dwellings have not been found in south Sweden or Denmark.

This settlement in Sweden has been examined with the thoroughness and knowledge characteristic of Scandinavian archaeology, and certainly suggests a neolithic date for the first occupation at least of the West Furze site in Yorkshire. Polished stone celts were found at Round Hill and Barmston, and quantities of flint flakes and lumps more or less battered at West Furze, but these alone would scarcely be conclusive evidence of date. The occurrence of a pitted stone (probably an anvil for flint-working) in neolithic surroundings in Sweden, however, adds considerably to the chronological value of the Ulrome stone finds, and the occurrence of a bronze lance-head in the upper level points in the same direction. It is unfortunate that no neolithic or Bronze Age pottery recognizable as such came to light at Ulrome, as this material is excellent evidence of date; and the evidence of the stones is somewhat invalidated by the repeated occurrence of plain ware that is almost certainly of the Early Iron Age, though the absence of ornament makes identification somewhat hazardous. The Roman finds may indicate an occupation in the early centuries of the Christian era, but the mediaeval pottery does not involve a re-occupation at a time when some of the Irish crannogs were still in use. The thick deposit of peat above the dwellings here and in Sweden proves an early abandonment of the sites.

INDEX TO VOLUME LXII

A

- Abbasanta, Sardinia, house arrangement paralleled at Caerwent, 418.
- Abbot, G. Wyman, The Discovery of Prehistoric Pits at Peterborough, 333.
- Abercromby, Hon. J.: on Bronze Age pottery, 245, 247; on prehistoric pottery, 340, 342, 346, 351.
- Aberdeen, Earl of, President of Society of Antiquaries, 7.
- Accoutrements, in wardrobe account, 500.
- Acheulian implement, Northfleet, 521, 524, 530.
- Adisham, Canterbury screen at, 361.
- Adzes, bone: Orkney, 600; Thames, 599; Ulrome lake-dwelling (Yorks.), 599.
- Aix-en-Provence, Canterbury hangings at, 356.
- Akhieropiëtos Church, Cyprus, 127.
- Album Amicorum, The, 251; books used as, 253; change in style of, 308; dates for, 252, 253; heraldry in, 254; illumination of, 259; illustrations of, 253; Keil's researches on the, 251; origin of, 251, 252; printed, 253, 254, 262, 263; of Philipp von Brandt, 283; of Hanns Brunnhofer, 255; of Charles de Bousy, 289; of Johann Baptist Buchxor, 270; of Johann Cellarius, 256; of Timann Cock, 280; of Hieronymus Cöler, 263; of Samuel Crämer, 258; of Sir Thomas Cuming, 298; of Georg Einrich, 304; of Eberhart ab Eltershofen, 270; of Antonio Fabri, 292; of Caspar Fraisllich, 278; of Johann Gastel, 281; of Paul Groe, 286; of Georg Christoph Hanseman, 306; of Otto Heinrich, 287; of Prince Henry Frederick, 302; of Georg Andre von Herberstein, 297; of Martin Hillinger, 257; of Johann Josias Kiesen, 254; of Johann Klärner, 263; of Jonas Kröschl, 288; of Giacomo Lauri, 299; of Valentine Löw, 296; of Joannes Molitor, 276; of Johannes Opsimathes, 282; of Heinrich Pilgram, 280; of Andreas Pramer, 304; of Daniel Rindfleisch, 257; of Johann Theodor von Roth, 301; of Andreas Rümelin, 254; of Heinrich Runge, 304; of Matheus Schmoll, 286; of Andreas Schopper, 256; of Heinrich Schott, 255; of Johannes Spon, 262; of Sebastian von Stamps, 268; of Ernst Gross von Trockau, 284; of Andreas Tucher, 267; of Stephanus Tucher, 305; of Anton Walbott, 266; of B. and J. Welser, 272; of Marcus Antonius Welser, 301; of Johannes Wiliczky, 293; of Sebastian Záh, 276.
- Alexander Severus, coin of, Caerwent (Mon.), 5.
- Allectus, coins of, Caerwent (Mon.), 409, 412, 421, 432, 443.
- Altars: Caerwent (Mon.), 409, 417, 431, 438; High, Canterbury (Kent), 359; accounts for new work to, 362; provided with new furniture by Queen Mary II, 361; wrong position of, 362; Westminster Abbey, 88, 89.
- Amber beads, Market Overton (Rutland), 483.
- Ambulatory plan, Norman churches, 554.
- Amman, Jost, illustrations in albums by, 253, 255, 256, 260.
- Andrews, Dr., on Ulrome animal remains, 603.
- Anglo-Saxon cemetery at Market Overton, Rutland, 481.
- Animal remains: Barmston (Yorks.), 606; Caerwent (Mon.), 5, 7, 14, 411, 417, 419, 427, 443, 474; Jersey, 451, 453, 464; Newbury (Berks.), 608; Northfleet (Kent), 519; Pickering (Yorks.), 608; Silchester (Hants), 324, 325; Sweden, 610; Thetford (Norfolk), 609; Ulrome (Yorks.), 603, 605; Wookey Hole (Som.), 590.
- Anne of Bohemia, Queen, mentioned in wardrobe account, 498.
- Anne Boleyn, Queen, supporter of, 315.
- Anthropomorphs, Market Overton brooches, 485, 486.
- Antiphonitissa, church at, Cyprus, 127.
- Antiquaries, Society of: annual feast, 64; apartments of, 61, 70, 78; association of with Royal Society, 78; common seal provided, 69; contributes £500 as a voluntary contribution for defence of the country in 1798, 70; dissolved by James I, 59; Fellows who have held the office of Director, 59; grant of Charter, 67; honorary foreign fellows first elected, 63; number of members limited, 61; refoundation of, 59; rooms allotted at Bur-

lington House, 78; at Somerset House, 70; subscriptions to the, 69, 76.
 Antiquities Law, Cyprus, 126.
 Antlers: Caerwent (Mon.), 417; picks, 101; tools, Ulrome (Yorks.), 603.
 Antoninus Pius, coins of: Caerwent (Mon.), 9, 409, 415, 426, 431, 441; Wookey Hole (Som.), 591.
 Arabic Numerals in Europe: Early Use of, 137; on coins and medals, 146; on German seals, 144; first use of in MSS., 139; on monuments, 141; on paintings, 147 *n.*; tables of, 151-70.
 Aramo, Spain, copper mines, 119.
 Arcadius, coins of, Caerwent (Mon.), 13, 417.
 Archaeological Institute, foundation of, 75.
 Architecture, Turkish, Cyprus, 127, 128, 129, 130, 131, 134.
 Argyleshire, neolithic pottery at Achnachree, 340.
 Armets, Chalcis armour, 387.
 Armlets: Barrington (Cambs.), 484; Longbridge (Warwick), 484; jet, Ulrome (Yorks.), 606; silver, fragments, Caerwent (Mon.), 484.
 Armour, Italian, from Chalcis in the Ethnological Museum at Athens, 381.
 Armourers' marks, Chalcis, 388, 389, 390.
 Arms in wardrobe account, 499; *see also* Arrows, Axes, Bronze implements, Celt, Dagger, Flint implements, Iron objects, Knives, Neolithic, Sling-stone, Spears, Stone implements.
 Arran, Scotland, cairns in, 246, 249; pottery, 340.
 Arrows, iron: Caerwent (Mon.), 439; Wookey Hole (Som.), 575.
 Arundell, Sir William de, mentioned in wardrobe account, 498.
 Ashby, Thomas, Hudd, A. E., and King, F., Excavations at Caerwent, Monmouthshire, on the site of the Romano-British City of Venta Silurum, 1, 405.
 Ashes: Cotte de St. Brelade (Jersey), 452; Cotte de St. Ouen (Jersey), 465; Wookey Hole (Som.), 573.
 Asinon, Cyprus, Church, 127.
 Athens, Italian armour from Chalcis at, 381.
 Avebury (Wilts.), deer-horn picks, 121.
 Awls, Wookey Hole (Som.), 576, 583.
 Axes: copper or bronze, Melagro mine, 120; neolithic, Jersey, 468, 474; stone, evolution of type, 530; iron, Caerwent (Mon.), 421, 439.
 Ayrshire, *see* Largs, West Kilbride.

B

Baden, arms of, 275.
 Baildon, W. Paley: A Wardrobe Account of 16-17 Richard II, 1393-4, 497.

Baker's Hole (Kent), 516.
 Balance, bronze arm of, Caerwent (Mon.), 439.
 Balch, H. E., and Troup, R. D. R., A Late-Celtic and Romano-British Cave-dwelling at Wookey Hole, near Wells, Somerset, 565.
 Bamberg, arms of Bishopric of, 284.
 Banwell (Som.) Earthworks, 567.
 Barbute, Chalcis armour, 383.
 Barmston (Yorks.): lake-dwellings, 607; animal remains, 607; pottery, 607; stone celt, 607.
 Barrington (Cambs.): armlets, 484; brooches from, 485.
 Barrows: Upper Swell (Glos.), 347; West Kennet, pottery, 343; Yorkshire, pottery, 341.
 Bascinet, Chalcis armour, 383, 384.
 Bateman, Thos., on neolithic pottery, 342.
 Baths, Famagusta, Cyprus, 134.
 Bayeux Cathedral, 560 *n.*, 561.
 Beaches, raised, Jersey, 464, 469, 476.
 Beads: amber, Market Overton (Rutland), 483; bronze, Brighthampton (Oxon.), 487; bronze, Gilton (Kent), 487; bronze, Market Overton (Rutland), 483, 487; crystal, Market Overton (Rutland), 483; glass, Market Overton (Rutland), 483; glass, Priddy (Som.), 567; glass, Wookey Hole (Som.), 567; gold, Market Overton (Rutland), 488; paste, Market Overton (Rutland), 483; pearl, imitation, Market Overton (Rutland), 483.
 Beakers, *see* Drinking cups.
 Beaufort, greyhound badge of, 313.
 Beauvais, picks from, 102.
 Becket, Abp. Thomas: attended St. Paul's School, 195; London schools in boyhood of, 212.
 Bedfordshire, *see* Leagrave, Shefford.
 Beeby (Lincs.), clasps from, 484.
 Belgium, absence of Le Moustier culture in, 530; *see also* Stavelot.
 Bellapaise monastery, Cyprus, 128.
 Bellis, Messrs. Bott and, discover human skull at Green Island, Jersey, 472.
 Bells, Canterbury (Kent), 355; dates on, 142 *n.*
 Berkeley, arms of, 300.
 Berkshire, *see* Newbury, Wallingford, Windsor.
 Bernay, abbey church, 553, 554, 555, 557, 558, 561.
 Berwick, North, kitchen-middens, pottery, 349.
 Beza, Theodore, inscription by in album, 283.
 Biggin (Derby): human skeleton, 342; pottery, 342.
 Billhook, iron, Wookey Hole (Som.), 575.
 Bilson, John, The Plan of the First Cathedral Church of Lincoln, 543.
 Birch, Rev. Thomas, fifth Director of Society of Antiquaries, 64; appointed Sub-director, 63.
 Blackstone, William, elected Fellow of Society, 68.

- Bobenhausen, arms of, 279.
 Body armour, Chalcis, 388.
 Bogdani, William, sixth Director of Society of Antiquaries, 65.
 Bone objects: adzes from Orkney, 600; from Thames, 597; Ulrome (Yorks.), 599; awls, Wookey Hole (Som.), 576, 583; bridle cheek-pieces, Wookey Hole (Som.), 583; burnisher, Wookey Hole (Som.), 583; carved bird's head, Caerwent (Mon.), 5; combs, Caerwent (Mon.), 2; Wookey Hole (Som.), 581; die, Caerwent (Mon.), 426; knife, Wookey Hole (Som.), 583; knife-handle, Caerwent (Mon.), 412; needles, Wookey Hole (Som.), 579; pins, Peterborough (Northants), 335; Silchester (Hants), 325, 326; Wookey Hole (Som.), 579; potter's tool, Wookey Hole (Som.), 583; spindle-whorls, Wookey Hole (Som.), 580; tally, Wookey Hole (Som.), 583; of unknown use, Wookey Hole (Som.), 582.
 Borden (Kent), monumental brass at, 142 *n.*
 Bornholm, bronze torc, 496.
 Bos, Cornelius, illustrations in albums by, 268.
Bos: remains of in Jersey, 454; *longifrons*, remains of, Jersey, 474; scapula used as a shovel in mining operations, 113.
 Bosses, shield, Market Overton (Rutland), 482.
 Boston, Abbot, grant of Westminster possessions to king, 35; of lands to the king, 56.
 Bott and Bellis, Messrs., discover human skull at Green Island, Jersey, 472.
 Bottle, glass, Wookey Hole (Som.), 579.
 Bousy, Charles de, album of, 289.
 Bowl: of Kimmeridge shale, Wookey Hole (Som.), 582; wooden, Wookey Hole (Som.), 573.
 Boy Bishop: St. Paul's, 214, 218; sermon, St. Paul's, 227.
 Boynton, T., discovers Holderness lake-dwellings, 593, 595; on Ulrome lake-dwelling, 598.
 Brabrook, Sir Edward William, On the Fellows of the Society of Antiquaries of London who have held the office of Director, 59.
 Bracelets, bronze: Caerwent (Mon.), 407, 413; Wookey Hole (Som.), 578.
 Bracteates: classes of, 492; distribution of, 491; history of, 491; gold, Market Overton (Rutland), 488, 491; Market Overton, date of, 493; Market Overton, place of manufacture, 493; Oxford, 491; Sarre (Kent), 491; silver, from Faversham (Kent), 484; Market Overton (Rutland), 484.
 Brading (Isle of Wight), Arabic numerals, 141.
 Brandenburg, Margrave of, writes in album, 298.
 Brandt, Philipp von, album of, 283.
 Brassard, Chalcis armour, 389.
 Brasses: monumental, Arabic numerals on, 141; Borden (Kent), 142 *n.*; date on John Campden's at St. Cross, Winchester (Hants), 142 *n.*; John Pulter's at Hitchin (Herts.), 142 *n.*; Eton College (Bucks.), 142 *n.*; Fressingfield (Suffolk), 142.
 Brelade, St., Cotte de, Jersey, exploration of, 450.
 Breuil, L'Abbé: on Jersey implements, 464; on Jersey caves, 466 *n.*
 Briard, M., on Spiennes flint-mines, 107.
 Bridge, stone, at Hampton Court, 309.
 Brigandines, Chalcis armour, 388.
 Brighthampton (Oxon.), pin from, 487.
 Brighton cliffs (Sussex), resemblance to Sangatte, 531.
 Britain, early immigrations, 249.
 Bronze Age: cemetery and other antiquities at Largs, Ayrshire, 239; West Kilbride, 244; pottery, 245; pottery, Peterborough (Northants), 337.
 Bronze implements: axe, Melagro mine, 120; dagger, Wookey Hole (Som.), 578; lance-head, Ulrome (Yorks.), 603; various, Silchester (Hants), 326.
 Bronze objects: balance arm, Caerwent (Mon.), 437; bracelets, Caerwent (Mon.), 407, 413; Wookey Hole (Som.), 578; brooches, Caerwent (Mon.), 10, 407, 408, 411, 412, 417, 421; Market Overton (Rutland), 484; Silchester (Hants), 325, 326, 329; Wookey Hole (Som.), 577, 578; bucket mounting, Market Overton (Rutland), 482; buckle, Caerwent (Mon.), 407; buckle, tinned, Market Overton (Rutland), 487; button, Wookey Hole (Som.), 578; chain, Market Overton (Rutland), 487; Wookey Hole (Som.), 577; chandeliers, Cyprus, 133; hinges, Wookey Hole (Som.), 578; pick, Salzberg mine, 120; pins, Silchester (Hants), 325; Wookey Hole (Som.), 579; pommel, Wookey Hole (Som.), 575; rings, Market Overton (Rutland), 487; Wookey Hole (Som.), 577, 578; rivets, Wookey Hole (Som.), 577; serpent-head ornament, Caerwent (Mon.), 5; stand, enamelled, Caerwent (Mon.), 15; steelyard, Caerwent (Mon.), 413 *n.*; torc, Bornholm, 496; tweezers, Wookey Hole (Som.), 578.
 Brooches: Barrington (Cams.), 485; Fairford (Glos.), 486; Ipswich (Suffolk), 485; Tuxford (Notts.), 485; bronze, Caerwent (Mon.), 10, 407, 412, 421; Market Overton (Rutland), 485; Silchester (Hants), 329; Wookey Hole (Som.), 577, 578; cruciform, Market Overton (Rutland), 486; Rothley Temple (Leics.), 486; Saxby (Leics.), 486; derivation of type of, Market Overton (Rutland), 485; iron, Silchester (Hants), 326; iron pen-annular, Wookey Hole (Som.), 577; saucer, Market Overton (Rutland), 487; Shefford (Beds.), 487; silver, Market Overton (Rutland), 488.

- 491, 496; silver penannular, Market Overton (Rutland), 484.
 Browne, Sir Anthony, granted manor of Neyte, 45.
 Brunnhofer, H., album of, 255.
 Brunswick, Duke of, writes in album, 303.
 Brunton Hill, Yorkshire, lake-dwelling, 607.
 Bry, de, illustrations in albums by, 256, 257, 258.
 Buchon, M., discovers Chalcis armour, 381.
 Buchxor, Johann Baptist, album of, 270.
 Bucket: lining, Taplow (Bucks.), 483; mountings, Market Overton (Rutland), 482; Sleaford (Lincs.), 482.
 Buckingham, George Villiers, Duke of, inscription and arms in album, 303, 304.
 Buckinghamshire, *see* Eton, Taplow.
 Buckle: bronze, Caerwent (Mon.), 407; and tinned, Market Overton (Rutland), 487; iron, Wookey Hole (Som.), 577.
 Burials: Caerwent (Mon.), 434; Silchester (Hants), 318, 330.
 Burows, Mr., provides glass window for Canterbury Cathedral, 364.
 Burrough, James, architect for altar-piece at Canterbury Cathedral, 362.
 Burroughs, Wm., makes brass eagle at Canterbury Cathedral, 364.
 Busigny, Le Moustier workshop at, 532.
 Butchard, Mr. George, 515, 519.
 Buttons: Chalcis jewellery, 399; bronze, Wookey Hole (Som.), 578.
 Byzantine: churches and monasteries, Cyprus, 127; enamels, date of, 25; Stavelot triptych, 23 ff.; work, Stavelot triptych, 21, 25.

C

- Cadwallader, dragon badge of, 313.
 Caen: St. Étienne, 543, 545, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562; St. Nicolas, 545, 554, 555, 556, 557, 558, 559, 560, 561; St. Trinité, 559, 561; vaults of abbey of, 84.
 Caerwent, Monmouthshire, excavations at, 1, 405; altars, 409, 417, 431, 438; animal remains, 5, 7, 14, 411, 417, 419, 427, 443, 474; antlers, 417; arrows, 439; axes, 421, 439; balance, 439; bracelets, 407, 413; brooches, 10, 407, 412, 421; buckles, 407; burials, 434; cellar, 423; coins, *see* Coins; combs, 2; die, 426; discs, 3, 439; enamels, 12, 15, 411; finial, 443; frit, 12; glass objects, 5, 14, 423; gold coin, 8; human remains, 411, 414, 421, 434; hypocausts, 405, 406, 414, 423, 426; inscription, 431; keys, 435; kilns, 17; ladle, 439; lamp, 431; lead objects, 407, 437,

- 439; mortarium, 426; mould, 424; nails, 419, 443; pavements, 6, 407, 412, 415, 416, 418, 421, 425, 428; pewter objects, 407, 410; pipes, 420; plane, 425; plaster, 409, 411, 414, 418, 419, 424, 428, 432, 439, 440; pottery, *see* Pottery, Samian; querns, 17, 409, 413, 445; rings, 438; sandals, 417; seeds, 15, 19, 448; shears, 420, 439; shells, 406, 408, 425; skeleton, 444; skulls, 411, 434; spears, 421, 434, 439; spindle-whorls, 411; statues, 14, 16; steelyard, 413; temples, 4, 439; thresholds, 415, 418, 430, 437; tiles, 405, 413, 414, 424, 428, 437, 439; Upchurch ware, 10, 12; urns, 414, 417, 421, 436; vegetable remains, 15, 19, 448; weights, 407, 438.
 Cairns: Arran, 248; Largs, 247; chambered, 248, 249.
 Calcite mining, 117.
 Calleva Atrebatum, *see* Silchester.
 Cambridgeshire, *see* Barrington, Ely, Wood Ditton.
 Camden, William, inscription in album, 287.
 Cannibalism, Jersey cavemen, 455.
 Canterbury Cathedral: altars, 359; altar, throne, stalls, and pulpit provided with new furniture by Queen Mary II, 361; altar-piece, 362; brass eagle, 364; Choir during the Commonwealth and after, 353; hangings, 355; Clock House, 355; Prior Eastry's 'novum orologium', 355; gilded sun at, 363; Lanfranc's cathedral, 554, 555, 556, 559, 560; organs, 358, 363, 364, 365; screen, high altar, 359, 360; screens, iron, 358; screens, parclose, 357; screen now at Adisham, 361; stalls, 356, 358; pavement of choir, 362; pulpitum, 357; wall paintings, 356; St. Augustine, 543, 554, 555.
 Carausius, coins of: Caerwent (Mon.), 17, 409, 412, 424, 425, 426, 432; Silchester (Hants), 326; Wookey Hole (Som.), 591.
 Cardinals of St. Paul's, 203.
 Carlisle, Bishop of, President of Society of Antiquaries, 68.
 Carnon (Cornwall), deer-horn pick, 118.
 Carøe, W. D., Canterbury Cathedral Choir during the Commonwealth and after, with special reference to two oil paintings, 353.
 Castle Acre (Norfolk), supposed Arabic dates at, 142 n.
 Castles, Cyprus, 129.
 Cave: of St. Brelade, Jersey, exploration of, 450; of St. Ouen, Jersey, exploration of, 462; dwelling, a Late-Celtic and Romano-British, at Wookey Hole (Som.), 565; Jersey, relative dates of, 465.
 Cellar, Caerwent (Mon.), 423.
 Cellarius, J., album of, 256.

Celt: stone, Barmston (Yorks.), 607; Ulrome (Yorks.), 606.
 Celtic remains, Wookey Hole (Som.), 575 ff.
 Cemetery: Anglo-Saxon, at Market Overton (Rutland), 481; Bronze Age, at Largs, Ayrshire, 239; West Kilbride, 244.
 Cerisy-la-Forêt, abbey church, 554, 555, 556, 557, 558, 560, 561.
 Chain, bronze, Market Overton (Rutland), 487.
 Chalcis: capture of, 382; Italian armour from, 381; mediaeval personal ornaments from, 391.
 Champignolles, flint-mines, 109, 110, 111, 113, 117.
 Chancellor: later name for schoolmaster, 193; of St. Paul's, later position of, 205.
 Chappuis, Messrs. Colson and, explore Cotte de St. Brelade, 451.
 Charles I, King, autographs of in albums, 261, 290, 298, 303.
 Charterhouse-on-Mendip (Som.), Roman remains, 567.
 Châtillon, Switzerland, pottery, 343.
 Cheddar (Som.), Roman remains, 567.
 Chelles implements: Jersey, 467; Northfleet, 521.
 Chertsey, burial of King Henry VI at, 538, 539, 540, 541.
 Chesterfield, Lord, on albums, 308.
 Chichester Cathedral, 559.
 Chillenden, Prior: pulpitum at Canterbury, 354, 357; ornaments high altar at Canterbury, 359.
 Chisel, iron, Wookey Hole (Som.), 576.
 Choir school, St. Paul's, 191, 198, 199.
 Chopping tools, Northfleet, 526.
 Choristers, St. Paul's, 214.
 Christchurch, Hants, 561 n.
 Church, possible remains of early, Caerwent, 412, 416.
 Churches: and Monasteries, Byzantine, Cyprus, 127; Cypriote, destruction of, 135.
 Cicogna, arms of, 399.
 Cissbury (Sussex), 111, 112, 117.
 Cist, Largs, 239.
 Clarence, bull badge of, 313.
 Clasps: from Beeby (Leics.), 484; Kenninghall (Norfolk), 484; Sleaford (Lincs.), 484; Twyford (Leics.), 484; silver, Market Overton (Rutland), 484.
 Claudius Gothicus, coins of, Caerwent (Mon.), 2, 409, 417, 420, 421.
 Clay spindle-whorls, Wookey Hole (Som.), 580.
 Clock House, Canterbury Cathedral, 355.
 Cloister, Norman, at Westminster, 94.
 Cock, Timann, album of, 280.
 Coffin: of King Henry VI, 535; stone, Caerwent (Mon.), 444.

Coins: Arabic numerals on, 146; hoard of, Caerwent (Mon.), 416, 417; Roman: of Alexander Severus, Caerwent, 5; of Allectus, Caerwent, 409, 412, 421, 432, 443; of Antoninus Pius, Caerwent, 9, 409, 415, 426, 431, 441; Silchester, 326; Wookey Hole, 591; of Arcadius, Caerwent, 13, 417; of Carausius, Caerwent, 17, 409, 412, 424, 425, 426, 432; Silchester, 325; Wookey Hole (Som.), 591; of Claudius Gothicus, Caerwent, 2, 409, 417, 420, 421; of Constans, Caerwent, 412, 413, 417; of the Constantines, Caerwent, 2, 10, 12, 13, 15, 407, 409, 410, 411, 412, 414, 420, 421, 438; Silchester, 326; Wookey Hole (Som.), 591; of Constantino-polis, Caerwent, 406, 410, 413; Wookey Hole (Som.), 591; of Constantius, Caerwent, 407, 410, 412, 413, 414, 415; Wookey Hole (Som.), 591; of Crispus, Wookey Hole (Som.), 591; of Diocletian, Caerwent, 426; of Domitian, Caerwent, 412, 415, 417, 422; of Elagabalus, Caerwent, 8; of Eugenius, Caerwent, 13; of Gallienus, Caerwent, 5, 13, 413, 417; Wookey Hole (Som.), 591; of Gordianus Pius, Caerwent, 436; of Gratian, Caerwent, 12, 421; Wookey Hole (Som.), 592; of Hadrian, Caerwent, 10, 436, 438; Wookey Hole (Som.), 591; of Helena, Caerwent, 417; of Honorius, Caerwent, 13, 417; of Julia Domna, Caerwent, 438; of Julian the Apostate, Caerwent, 417; of Licinius, Caerwent, 417; of Magnentius, Caerwent, 412; Wookey Hole (Som.), 591; of Marcia, Caerwent, 430; Wookey Hole (Som.), 578, 591; of Maximianus, Caerwent, 18, 438; of Maximus, Caerwent, 13, 417; of Nero, Caerwent, 426; of Nerva, Caerwent, 424; of Postumus, Caerwent, 421, 426; of Probus, Caerwent, 409; of Salonina, Wookey Hole (Som.), 591; of Tetricus, Caerwent, 13, 16, 409, 412, 414, 420, 421, 431; of Theodore, Caerwent, 412, 414, 417, 421; of Theodosius, Caerwent, 13; of Titus, Wookey Hole (Som.), 591; of Trajan, Silchester, 326; Wookey Hole, 591; Urbs Roma, Caerwent, 410, 421; of Valens, Caerwent, 2, 12, 414, 415, 419, 426, 435; Wookey Hole (Som.), 592; of Valentinian, Caerwent, 13, 412, 420, 421; Wookey Hole, 591, 592; of Vespasian, Caerwent, 10, 435; Wookey Hole (Som.), 591; of Victor, Caerwent, 13, 417; of Victorinus, Caerwent, 5, 12, 15, 406, 414, 444; Wookey Hole (Som.), 591.
 Cöler, Hieronymus: album of, 263; arms of, 265.
 Colet, Dean: St. Paul's School before, 191; introduces study of Greek at St. Paul's School, 208; makes St. Paul's a free school, 209; petition to Pope for a Bull regarding St. Paul's, 237; statutes of

St. Paul's, 230; re-endows St. Paul's School, 201 ff.
 Colossi, Cyprus, castle of Order of St. John, 130.
 Colson and Chappuis, Messrs., explore Cotte de St. Brelade, 451.
 Colson, R., on Jersey echinoderms, 459.
 Combe, Taylor, fourteenth Director of the Society of Antiquaries, 73.
 Combs, bone: Caerwent (Mon.), 2; Wookey Hole (Som.), 581, 582.
 Commont, Prof.: Jersey implements, 459, 465, 466; on the Mousterian industry in North France, 527.
 Companies, City, schools governed by, 207.
 Constans, coins of, Caerwent, 412, 413, 417.
 Constantine: coins of, Caerwent, 2, 10, 12, 13, 15, 407, 409, 410, 411, 412, 414, 420, 421, 438; Silchester, 326; Wookey Hole (Som.), 591; medallions representing conversion of, Stavelot triptych, 22.
 Constantinopolis, coins of: Caerwent, 406, 410, 413; Wookey Hole, 591.
 Constantius, coins of: Caerwent, 407, 410, 412, 413, 414, 415; Wookey Hole, 591.
 Coombe-rock, 517, 518, 519, 520, 521, 531.
 Copper implements: axe from Milagro mine, Spain, 120; pick, Salzberg mine, 120.
 Copper-mining, 117, 119.
 Cornet, M., on Spiennes flint-mines, 107.
 Cornhaert, Dirk Volkaert, illustrations by in albums, 268.
 Cornwall, *see* Carnon.
 Costume, in wardrobe account, 500, 501.
 Count Palatine, privileges of, 271 n.
 Court of the manor of Neyte or Eybury, Westminster, 39.
 Crämer, Samuel, album of, 258.
 Cree, James, on North Berwick pottery, 349.
 Cremation: Britain, 249; Silchester, 327; Market Overton, 481.
 Crispus, coin of, Wookey Hole (Som.), 591.
 Cromer (Norfolk), school at, 207.
 Cromlin, arms of, 300.
 Cross: story of the finding of the, Stavelot triptych, 23; True, portions of in triptych from Stavelot, Belgium, 21.
 Crowther-Beynon, V. B., Notes on an Anglo-Saxon Cemetery at Market Overton, Rutland, 481.
 Crystal beads, Market Overton (Rutland), 483.
 Cuisses, Chalcis armour, 389.
 Culmer, Richard, *see* Dick, Blue.
 Cuming, album of Sir Thomas, 298.
 Cunningham, late Professor, on Largs skeleton, 247.
 Currency-bars, Wookey Hole (Som.), 574.
 Customary, Abbot Ware's, 88.

Cyclas, 502.

Cyprus: The Present Condition of the Ancient Architectural Monuments of, 125; Akhieropiētos, church at, 127; Antiphonitissa, church at, 127; Antiquities Law, 126; art, 133; Asinon church, 127; Bellapaise monastery, 128; Byzantine churches and monasteries, 127; Colossi, castle of Order of St. John, 130; destruction of churches, 135; Famagusta castles, 130; Famagusta churches, 128; Gothic architecture, 128; Hilarion, St., castle, 128, 129; history of, 126; Kalapoyotis church, 127; Karpars, ruins at, 127; Kiti church, 127; Kyrenia castles, 130; Lambousa, 127; Larnaca tombs, 126; Limassol castles, 130; Lusignan castles, 129; Nicosia, Venetian house, 130; Papho temples, 127; population, 131; Roman tomb, 127; Sandoukopetra, 127; Santa Croce church, 127; Tamassos tombs, 126; Troodos, domestic architecture, 130; Turkish architecture, 134; Turkish occupation, 133.

D

D'Abernon, Sir John, name of on a tally, 378.
 Dagger: bronze, Wookey Hole (Som.), 578; handle, Wookey Hole (Som.), 575; iron, Wookey Hole (Som.), 575.
 Dalton, O. M., Mediaeval Personal Ornaments from Chalcis in the British and Ashmolean Museums, 391.
 Dancaster: Messrs. Saunders and, explore Cotte de St. Brelade, 451; Messrs. Sinel and, explore Cotte de St. Ouen, 463.
 Davis, Roger, panels Canterbury parclose screens, 357.
 Deer-horn Pick: On the use of, in the Mining Operations of the Ancients, 101; Wookey Hole (Som.), 582.
 Degg, Simon, third Director of the Society of Antiquaries, 62.
 Dene-holes, 115.
 Denmark, bracteates, 492.
 Derbyshire, *see* Biggin, Longcliffe.
 Dering, Prior, gives hangings to Canterbury, 355.
 Devereux, Sir John, mentioned in wardrobe account, 498.
Dialogus de Scaccario: date of, 368; passage in regarding system of tally cutting, 372.
 Dick, Blue: on destruction of Canterbury high altar screen, 359; on Canterbury organ, 365.
 Die: bone, Caerwent (Mon.), 426.
 Dillon, Viscount, twenty-fourth Director of the Society of Antiquaries, 79.
 Diocletian, coin of, Caerwent (Mon.), 426.

Director of the Society of Antiquaries: Fellows who have held the office of, 59; duties of, 63; list of, 80; rules regarding, 60.
 Discs: Kimmeridge shale, Caerwent (Mon.), 3; lead, Caerwent (Mon.), 439; silver, Faversham (Kent), 484; Market Overton (Rutland), 484.
 Documents: regarding St. Paul's School, 193, 194, 196, 197, 198, 200, 201, 202, 203, 204, 211 ff.; regarding remains of King Henry VI, 538 ff.; regarding Westminster Abbey, 83 ff.
 Dolberrow (Som.), earthworks, 567.
 Domesday, Manor of Eia in, 32.
 Domitian, coin of, Caerwent (Mon.), 412, 415, 417, 422.
 Dorchester, date of transference of see to Lincoln, 544.
 Dorset, *see* Maumbury.
 Douglas, Bishop, of Carlisle, on vault of King Henry VI, 533.
 Dowland, John, fugue by in album, 256.
 Drebbel, Cornelius, inscription in album, 288.
 Drills, iron, Wookey Hole (Som.), 576.
 Drinking-cups, 336-9, 340, 344-6, 347, 349, 351; distribution of, 351.
 Durham Cathedral, 555, 557, 560.

E

Eadgyth, Queen, tomb of, 93.
 Eagle, brass, Canterbury, made by Wm. Burroughs, 364.
 Ear-rings: Chalcis, 396; silver, Wookey Hole (Som.), 578.
 Earthworks: Banwell (Som.), 567; Dolberrow (Som.), 567; Masbury (Som.), 567; Nicosia, Cyprus, 131; Silchester, 317, 329, 330, 332.
 Eastry, Prior: erects monks' stalls, 356; erects 'novum orologium' at Canterbury, 355; erects pulpitum at Canterbury, 357; screen at Canterbury, 355.
 Eccleston, Arabic numerals, 141.
 Echinoderms, in Cotte de St. Brelade, 459.
 Edmund of Langley, mentioned in wardrobe account, 498.
 Edward the Confessor, King: church of, at Westminster, 81 ff., 543, 554-8; tomb erected by William the Conqueror, 87, 92.
 Edward I, King, Acts regulating tallies, 374.
 Eglingham (Northumb.), dated bell, 142 n.
 Eia or Eye: manor of, next Westminster, 31; supposed division of manor, 33; part of parish of St. Martin-in-the-Fields, 33.
 Elagabalus, gold coin of, Caerwent, 8 n. 2.

VOL. LXII.

Elgin Marbles, transport of, 71.
 Elizabeth, Princess, inscription in album, 290, 303.
 Ellis, Sir Henry, twentieth Director of the Society of Antiquaries, 76; Secretary, 76.
 Elmley Castle (Worcs.), dated bells, 142 n.
 Eltershofen, Eberhard ab, album of, 270.
 Ely Cathedral, 559, 560.
 Emrich, Georg, album of, 304.
 Enamels: bronze brooch, Caerwent, 411; Caerwent, 12, 15; Chalcis jewellery, 398; filigree, distribution of, 399; Stavelot, triptych, 21 ff.
 Englefield, Sir H. C., President of Society of Antiquaries, 72.
 Enlart, M. Camille, on Cyprus, 125, 126, 128.
 Ernest, Abp. of Cologne, inscription in album, 278.
 Essex, *see* Grays, Rayleigh.
 Eton College, monumental brasses at, 142 n.
 Euboea, history of, 391.
 Eugenius, coin of, Caerwent, 13.
 Europe, Early Use of Arabic Numerals in, 137.
 Evans, A. J., on Oxford bracteate, 491.
 Exchequer: Tallies, 367; stopping of, 371.
 Exeter, Earl and Countess of, inscription in album, 303.
 Eybury: farm, 41, 42, 46, 47, 48, 52; manor, 33, 38, 39, 41, 42, 43, 47, 49, 50; lease of granted by Abbot Islip, 43; plans of, 35, 36, 37.
 Eye, Manor of, *see* Eia.

F

Fabri, Antonio, album of, 292.
 Fairford, Gloucestershire, brooch from, 486.
 Famagusta, Cyprus, 131, 132, 133, 134, 136; castles, 130; churches, 128.
 Faversham (Kent), silver disc from, 484.
 Fécamp, abbey church, 554.
 Felbrigg: Sir George, mentioned in wardrobe account, 498; Sir Simon, mentioned in wardrobe account, 498.
 Ferdinand II, Emperor, inscription in album, 278.
 ffoulkes, Charles, On Italian Armour from Chalcis in the Ethnological Museum at Athens, 381.
 Fibulae, *see* Brooches.
 Finial, Caerwent (Mon.), 443.
 Finland, pottery, 346.
 Fitzer, Wilhelm, album of, 258.
 Fitzstephen on London schools, 195.
 Flint implements: Champignolles, 113; Jersey, 451, 452, 457, 458, 459-62, 463-9, 474, 477; Newbury (Berks.), 608; mining, 103; Northfleet, 515-32; patina, 527; Peterborough, 335; picks, 110;

4 H

Ulrome (Yorks.), 598, 600, 602, 606; Wookey Hole (Som.), 581.
 Flint: mining, 102; working, method adopted, 526, 528, 529, 530.
 Flint, Jersey, geographical source of, 458.
 Floris, Francis, illustrations by in albums, 268.
 Food-vessels, 347, 348.
 Forests, submerged, Jersey, 474, 475.
 Fortnum collection of Chalcis jewellery, 392.
 Fraisligh, Caspar, album of, 278.
 France, North, Le Moustier industry in, 528.
 Franks, Sir Augustus Wollaston: bequeaths Album Amicorum to Society's library, 286; collection of Chalcis jewellery, 391 *n.*; twenty-first Director of the Society of Antiquaries, 77; President, 77.
 Frederick, Charles, fourth Director of the Society of Antiquaries, 63.
 Frederick, Elector and King of Bohemia, inscription in album, 278, 282, 283, 303.
 Fressingfield (Suffolk), monumental brasses, 142.
 Freyman, arms of, 275.
 Frit, blue, Caerwent, 12.
 Frowyk, arms of, 300.
 Fugger, arms of, 272.
 Furfooz, Belgium, picks in calcite mines at, 117.
 Furze, West, lake-dwelling, Ulrome, *see* Ulrome.

G

Gale, Samuel, second Director of the Society of Antiquaries, 61.
 Galle, Philipp, illustrations by in albums, 268.
 Gallienus, coins of: Caerwent, 5, 13, 413, 417; Wookey Hole (Som.), 591.
 Galloway, lake-dwellings, 601.
 Gard, M. Martin du, on Jumièges, 94, 96.
 Gastel, Johann, album of, 281.
 Gebattel, arms of, 284.
 Geology: Coombe-rock, 517 ff.; Jersey, 453, 469; Northfleet, 516.
 German use of Arabic numerals, 143.
 Gilton (Kent), bead from, 487.
 Girdles of King Henry V, 399, 403.
 Glaciation, 530, 531; of North of France, 475 *n.*
 Glass objects: Caerwent (Mon.), 5, 14; Silchester (Hants), 326; Wookey Hole (Som.), 579; beads, Market Overton (Rutland), 483; Priddy (Som.), 567; Wookey Hole (Som.), 567; inscribed, Caerwent, 423; rod, Silchester, 326.
 Gloucestershire, *see* Fairford, Lydney, Rendcombe, Upper Swell.
 Godefroi de Claire, maker of Stavelot triptych, 30.

Gold objects: bead, Market Overton (Rutland), 488; bracteates, Market Overton (Rutland), 488, 491 ff.; Oxford, 491; Sarre (Kent), 491; coin, Caerwent (Mon.), 8 *n.* 2; jewellery, Chalcis, 391 ff.; ring, Market Overton (Rutland), 488.
 Goldstone, Prior, gives hangings to Canterbury Cathedral, 355.
 Gordianus Pius, coin of, Caerwent (Mon.), 436.
 Gordon, Alexander, Secretary of Society of Antiquaries, 63.
 Gouge, iron, Wookey Hole (Som.), 576.
 Gough, Richard, tenth Director of the Society of Antiquaries, 69.
 Grance, de, arms of, 307.
 Gransmoor (Yorks.): lake-dwellings, 606; pottery, 606.
 Gratian, coins of, Caerwent, 12, 421; Wookey Hole (Som.), 592.
 Gray, H. St. George, excavates Maumbury Rings, 122.
 Grays (Essex), flints from, 531.
 Greek: introduction of into England, 208; into St. Paul's by Colet, 208; system of numerals, 149.
 Green Island, Jersey, human skull from, 472.
 Greystoke, Cumberland, dated bells, 142 *n.*
 Grimes Graves (Suffolk), 116; lamps found at, 115; mining tools from, 112; picks from, 117; plan of, 111.
 Grosvenor estate, London, 51; formation of, 47.
 Groe, Paulus, album of, 286.

H

Haddingtonshire, pottery in kitchen-middens, 348, 349.
 Hadrian, coins of: Caerwent (Mon.), 10, 18, 436, 438; Wookey Hole (Som.), 591.
 Hamilton, William Richard, twelfth Director of the Society of Antiquaries, 71.
 Hammer-stones, Wookey Hole (Som.), 585.
 Hampshire, *see* Brading, Christchurch, Romsey, Silchester, Winchester.
 Hampton Court: alterations to gate-house, 312; bridge, stone, at, 309; bridge, accounts for building of, 310; bridge, beasts on pinnacles of, 312, 313; accounts for, 314; bridge, date of, 309; bridge, pinnacles on, 312; history of building, 309; Hospitallers' camera on site previous to palace, 311; moat, date of, 311; moat, boundary walls of, 311; moat, treatment of walls of, 315.
 Hanseman, Georg Christoph, album of, 306.
 Hartover, P. C., restores Canterbury high altar screen, 360.

- Hartschier, arms of, 254.
Haverfield, Prof., on Caerwent temple, 439 *n*.
Hayes, Rev. J. W., on Dene-holes, 115.
Hayes Common, hut-circles, 334.
Haylee, Largs : cairn, 247 ; cist, 246.
Hearths, Wookey Hole (Som.), 573.
Hefner, on Chalcis armour, 381.
Heiligenkreuz, arms of monastery of, 273.
Heinrich, Otto, album of, 287.
Helena, coins of, Caerwent, 417.
Helmdon, mantelpiece, Arabic dates on, 142 *n*.
Helmets, Turkish, Chalcis armour, 387.
Hemskerk, Martin von, illustrations by in albums, 268.
Henrietta Maria, Queen, inscription in album, 303.
Henry V, King, girdles of, 399, 403.
Henry VI, King : discovery of remains of, in St. George's Chapel, Windsor, 533 ; abbot and convent of Westminster claim body of, 539 ; appearance of remains on exhumation at Chertsey, 541 ; burial of, 538 ; death of, 538 ; expenses of burial of, 538 ; Prof. Macalister on bones of, 536 ; Privy Council's decision on claim of abbot of Westminster to the body of, 540 ; removal of body from Chertsey to Windsor, 539 ; site of grave, 533, 534 ; summary of evidence that remains found at Windsor are those of, 541 ; vault and coffin of, 535.
Henry VII, King, intentions regarding burial of King Henry VI, 539.
Henry VIII, beasts on Hampton Court bridge, 312, 313.
Henry, Prince, inscription of in album, 290.
Henry Frederick, Prince, album of, 302.
Heraldry : in albums (Amicorum), 254-308 ; arms : of Baden, 275 ; of Bamberg, Bishopric of, 284 ; of Berkeley, 300 ; of Bobenhausen, 279 ; of Buckingham, Villiers, Duke of, 303 ; of Cicogna, 399 ; of Cöler, 265 ; of Cromlin, 300 ; of Degg, 62 ; of Freyman, 275 ; of Frowyk, 300 ; of Fugger, 272 ; of Gebattel, 284 ; of de Grance, 307 ; of Hartschier, 254 ; of Heiligenkreuz monastery, 273 ; of Hess, 266 ; of Hofman, 266 ; of Holland, Earl of, 304 ; of von Khobersperg, 297 ; of Kirchberg, 272 ; of Lake, 301 ; of Lerchenfelder, 275 ; of Lestrangle, 300 ; of Lilienfeld monastery, 274 ; of Molitor, 274 ; of Munsterberg, Duke of, 297 ; of Narborough, 300 ; of Neidhart, 272 ; of Obersdorffer, 268 ; of Ratisbon, Bishopric of, 278 ; of Reiss, 274 ; of Reuchl, 268 ; of Schonenburg, 272 ; of Schretel, 274 ; of Schwannbergk, 296 ; of Spelman, 300 ; of Stegeman, 297 ; of Teutonic Order, 279 ; of von Thau, 273 ; of von Thurn, 296 ; of Trieste, John, Bishop of, 279 ; of Vienna, Scots' monastery at, 274 ; of Weissenhorn, 272 ; of Wentworth, 300 ; of Wettengel, 297 ; badge : of Beaufort, 313 ; of Cadwallader, 313 ; of Clarence, 313 ; beasts on pinnacles of Hampton Court bridge, 312, 313, 314, 315 ; bull as king's supporter, 313 ; dragon as king's supporter, 313 ; greyhound as king's supporter, 313 ; lion as king's supporter, 313 ; as queen's supporter, 313 ; lybartt as queen's supporter, 315 ; panther on Hampton Court bridge, 314 ; unicorn as queen's supporter, 313 ; the yale, 313 ; as supporter of Duke of Somerset, 314.
Herberstein, G. A. von, album of, 297.
Hertfordshire, *see* Hitchin, St. Albans, Wiggell.
Hess, arms of, 266.
Hilarion, Cyprus, castles, 128, 129.
Hill, G. F., On the Early Use of Arabic Numerals in Europe, 137.
Hillinger, Martin, album of, 257.
Hinges, bronze, Wookey Hole (Som.), 578.
Hitchin (Herts.), date on John Pulter's brass, 142 *n*.
Hofman, arms of, 266.
Holbein, illustrations by in albums, 262.
Holderness (Yorks.), lake-dwellings in, 593 ; geology of, 593.
Holland, Earl of, arms, 304.
Homo Breladensis, Jersey, 456.
Hone-stones, Wookey Hole (Som.), 585.
Honorius, coins of, Caerwent (Mon.), 13, 417.
Hoof-plate, iron, Wookey Hole (Som.), 576.
Hope, W. H. St. J. : The Discovery of the Remains of King Henry VI in St. George's Chapel, Windsor, 533 ; on Canterbury high altar screen, 359 ; excavates at Lincoln, 546 ; and Mill Stephenson, Excavations about the Site of the Roman City at Silchester (Hants), 1910, 317.
Horse, remains of in Jersey, 454, 471.
Horse-bits, Market Overton (Rutland), 482.
Horse-head brooch, Market Overton (Rutland), 485.
Hospitaliers, camera of on site of Hampton Court Palace, 311.
Hospitals, attached to cathedrals, 197.
Houzé, Dr. E., on Obourg skeleton, 105.
Hudd, A. E., *see* Ashby, T.
Human remains : Caerwent (Mon.), 411, 414, 421, 434, 436, 444 ; Jersey, 455, 471 ; King Henry VI, 533 ; Largs, 247, 248 ; Market Overton (Rutland), 481 ; Pickering (Yorks.), 608 ; Priddy (Som.), 567 ; Ulrome (Yorks.), 598, 605 ; Wookey Hole, 570, 575, 583.
Huntingdon, Henry of, on first church at Lincoln, 544.

Hut-circles, 334.
 Huts, Silchester, 331.
 Hyde, manor of, Westminster, 33, 49, 52; seized by king, 52.
 Hygeia, possible statuette of, Caerwent, 5 n. 2.
 Hypocausts, Caerwent (Mon.), 405, 406, 414, 423, 426.

I

I'anson and Vacher, Messrs., on Cypriote monuments, 126.
 Icons, Cyprus, 133.
 Implements: *see* Bronze, Copper, Flint, Iron, Stone.
 Inscriptions: altar, Caerwent (Mon.), 431; Chalcis jewellery, 394, 398, 400, 401; Stavelot triptych, 22, 23.
 Insect remains, Caerwent (Mon.), 445.
 Inventories of jewels, 403.
 Ipswich (Suffolk): brooches from, 485; torc from, 483.
 Ireland, food-vessels, 348.
 Iron objects: arrows, Wookey Hole (Som.), 575; awls, Wookey Hole (Som.), 576; axes, Caerwent, 421, 439; bill-hook, Wookey Hole (Som.), 575; brooches, Silchester (Hants), 326; penannular, Wookey Hole (Som.), 577; bucket mountings, Market Overton (Rutland), 482; buckle, Wookey Hole (Som.), 577; chisel, Wookey Hole (Som.), 576; currency-bars, Wookey Hole (Som.), 574; dagger, Wookey Hole (Som.), 575; drills, Wookey Hole (Som.), 576; gouge, Wookey Hole (Som.), 576; hoof-plate, Wookey Hole (Som.), 576; javelin, Wookey Hole (Som.), 575; keys, Caerwent (Mon.), 435; Wookey Hole (Som.), 576, 577; knife, Wookey Hole (Som.), 577; nails, Caerwent (Mon.), 419, 443; Wookey Hole (Som.), 574, 577; pin, split, Wookey Hole (Som.), 576; plane, Caerwent (Mon.), 445; saws, Wookey Hole (Som.), 576; screens, Canterbury Cathedral, 358; shears, Caerwent (Mon.), 420, 439; sickle, Wookey Hole (Som.), 576; spade shoes, Priddy (Som.), 577; Wookey Hole (Som.), 577; spears, Caerwent (Mon.), 421, 434, 439; Market Overton (Rutland), 482; Wookey Hole (Som.), 575; tethering ring, Wookey Hole (Som.), 576; various, Caerwent (Mon.), 428, 435; of unknown use, Wookey Hole (Som.), 577; slag, Caerwent (Mon.), 439; pyrites, Cotte de St. Ouen (Jersey), 465.
 Islip, Abbot, of Westminster: buildings by, 44; death of, 43; funeral of, 44, 45; grants lease of Eybury, 43, 54.
 Italian armour from Chalcis, 381.

J

Jambs, Chalcis armour, 389.
 James I, King, dissolves Society of Antiquaries, 59.
 Jane Seymour, Queen, her beasts on Hampton Court bridge, 313-15.
 Javelin, iron, Wookey Hole (Som.), 575.
 Jazeran coat, Chalcis armour, 389.
 Jeffery, George, *The Present Condition of the Ancient Architectural Monuments of Cyprus*, 1910, 125.
 Jenkinson, Hilary, on Exchequer Tallies, 367.
 Jenny's Whim, Westminster, 49.
 Jersey: changes in elevation of, 479; connexion of with Continent, 454; exploration of Cotte de St. Brelade, 450; of Cotte de St. Ouen, 462; flint implements, 451, 452, 457-62, 463-9, 474, 477; human remains, 455; Pleistocene Man in, 449; pre-Mousterian period in, 476; quaternary history of, 475.
 Jetons, Arabic numerals on, 146.
 Jewellery: Chalcis, 391; in wardrobe account, 499.
 John of Gaunt, request to live at Neyte, 42.
 Johnson, Thos.: painter of picture of Canterbury choir, 353; accuracy of his picture of Canterbury, 355; biography of, 354; illustrations in the *Monasticon* by, 353.
 Jonas, Prof. Justus, autograph of in album, 263.
 Jordan, W., works on Canterbury organ, 364.
 Julia Domna, coin of, Caerwent (Mon.), 438.
 Julian the Apostate, coins of, Caerwent (Mon.), 417.
 Jumièges: abbey church, 543, 553, 555, 557, 558, 559, 560, 561; comparison with Westminster, 81; arrangement of, 94; plan of, 96.
 Jumièges, Abbot Robert of, made Bishop of London and Archbishop of Canterbury, 81.
 Jupe: origin of garment, 501; later history of, 502.
 Jupon, 502.

K

Kalapoyotis, Cyprus, church at, 127.
 Karpars, Cyprus, ruins at, 127.
 Karlake, J. B. P., *Notes on Discoveries in the Outer Entrenchment, Silchester*, 330.
 Keil, Robert, on the Album Amicorum, 251.
 Keith, Prof. A.: on teeth of *Homo Breladensis*, 456, 457; on skull from Ulrome (Yorks.), 598.
 Kennet, West (Wilts.), pottery, 343.
 Kenninghall (Norfolk), silver clasps from, 484.
 Kent: *see* Adisham, Baker's Hole, Borden, Canterbury, Faversham, Gilton, Northfleet, Ospringe, Sarre, Swanscombe.

Kepler, Johannes, inscription by in album, 285, 286.
 Keys: Caerwent (Mon.), 435; Market Overton (Rutland), 482; Wookey Hole (Som.), 576, 577.
 Khobersperg, von, arms of, 297.
 Kiesen, J. J., album of, 254.
 Kilbride, West, Bronze Age cemetery, 244.
 Kilns: Caerwent (Mon.), 17; potter's, Silchester (Hants), 327-9.
 Kimmeridge shale: bowl, Wookey Hole (Som.), 582; disc, Caerwent (Mon.), 3; spindle-whorl, Caerwent (Mon.), 411; Wookey Hole (Som.), 580, 581.
 King, F., *see* Ashby, T.
 Kirchberg, arms of, 272.
 Kitchen-middens, Haddingtonshire, 348, 349.
 Kiti, Cyprus, 127, 131, 132.
 Klarner, Johann, album of, 263.
 Knee-cops, Chalcis armour, 389.
 Knife-handle, bone, Caerwent, 412.
 Knives: bone, Wookey Hole (Som.), 583; flint, Wookey Hole (Som.), 581; iron, Wookey Hole, (Som.), 575, 576, 577.
 Knowle Farm Quarry (Wilts.), St. Acheul implements at, 531.
 Kröschl, Jonas, album of, 288.
 Kyrenia, Cyprus, 130, 131, 134.

L

Ladle, Caerwent (Mon.), 439.
 Lady Chapel at Westminster, date of, 90.
 Lake, arms of, 301.
 Lake dwellings: Barmston (Yorks.), 607; Brunton Hill (Yorks.), 607; Gransmoor (Yorks.), 606; Holderness (Yorks.), 593; Newbury (Berks.), 608; Pickering (Yorks.), 608; Sweden, 609; Thetford (Norfolk), 608; Ulrome (Yorks.), 594.
 Lambousa, Cyprus, 127.
 Lamp: Wookey Hole (Som.), 581; toy, Caerwent (Mon.), 431.
 La Naulette law, 455.
 Lancashire, *see* Stockport.
 Lance-head, bronze, Ulrome (Yorks.), 603.
 Largs (Ayrshire): Bronze Age cemetery and other antiquities at, 239; cist, 239, 242, 244, 246; Haylee, cairn, 247; human remains, 247, 248; stone hammer, 242, 245; pottery, 239, 240, 241, 242, 243, 244, 247.
 Larnaca, Cyprus, prehistoric tombs, 126.
 Late-Celtic and Romano-British cave-dwelling at Wookey Hole, Somerset, 565.
 Lathe, use of, Wookey Hole (Som.), 583.
 Lauri, Giacomo, album of, 299.

Le Moustier, *see* Mousterian.
 Leach, A. F., St. Paul's School before Colet, 191.
 Lead objects: bars, Caerwent (Mon.), 435; discs, Caerwent, 439; panel, Caerwent, 435; ring, Caerwent, 438; spindle-whorls, Wookey Hole (Som.), 580; weight, Caerwent, 407.
 Lead mining: Charterhouse (Som.), 567; Priddy (Som.), 567.
 Leagrave, (Beds.), pin, 487.
 Leather sandals: remains of, Caerwent (Mon.), 417; Wookey Hole (Som.), 590.
 Leeds, E. Thurlow, Supplementary Note on the Gold Bracteate and Silver Brooch from Market Overton, 491.
 Leicester, Lord, President of Society of Antiquaries, 70.
 Leicestershire, *see* Rothley Temple, Saxby, Twyford.
 Lerchenfelder, arms of, 275.
 Lessay, abbey church, 554, 555, 556, 557, 559, 561.
 Lestrangle, arms of, 300.
 Lethaby, W. R., Notes on the Existing Remains of the Confessor's Church, Westminster, 97.
 Levallois flakes, 530.
 Licinius, coins of, Caerwent (Mon.), 417.
 Lighting: Salzberg mines, 121; Spanish mines, 119.
 Lilienfeld, arms of monastery of, 274.
 Limassol, Cyprus, 130, 131, 132.
 Lincoln: The Plan of the First Cathedral Church of, 543; date of building of first church, 544; date of transference of see from Dorchester, 544; description of plan of first church at, 553 ff.; remains of first church at, 546 ff.
 Lincolnshire, *see* Beeby, Lincoln, Sleaford, Spalding.
 Lingall, T., does work to the altar at Canterbury, 360.
 Litlington, Abbot: buildings at Westminster, 41, 94; death of, 42.
 Livery colours, Richard II, 503.
 Loë, M. Baron de, on Spiennes flint-mines, 106.
 Loess, formation of, Jersey, 471.
 London: St. Bartholomew, Smithfield, disputations at, 196, 197; letters patent of schools in, 224, 225; Mercers' school, 201; petition for establishing schools in, 225; petition of three schools of, 223; St. Martin's in the Fields, and Neyte, 33, 38, 40; St. Martin's le Grand, 194, 195, 197, 200; St. Mary le bow, 194, 195, 197, 200; St. Paul's School, 191 ff.; Savoy Palace, destruction of, 42; schools in, 200, 201; *see also* Eia, Eybury, Grosvenor, Hyde, Mercers', Monster The, Neyte, St. Paul's, Smithfield, Somerset House, Tybourne, Westbourne, Westminster.
 Longbridge (Warwick), armlets from, 484.

Longcliffe (Derbyshire), pottery, 341.
 Löw, Valentine, album of, 296.
 Luffenham, North (Rutland), Anglo-Saxon cemetery, 489.
 Lutelburg, Sir John, mentioned in wardrobe account, 498.
 Luther, Martin, tertius, autograph of in album, 263.
 Lydney (Gloucestershire), Roman temple at, 4.
 Lyell, A. H.: On the Insect Remains found at Caerwent, 445; On the Vegetable Remains from Caerwent, 448.
 Lysons, Samuel, eleventh Director of the Society of Antiquaries, 70.

M

Macalister, Prof.: on Caerwent skull, 435; on King Henry VI's bones, 536.
 Macclesfield (Yorks.), school at, 207.
 Mace-head, stone, Ulrome (Yorks.), 606.
 Magnentius, coins of: Caerwent (Mon.), 412; Wookey Hole (Som.), 591.
 Major, Prof. Georgius, autograph of in album, 263.
 Malaise, M. C., on Spiennes flint-mines, 106.
 Mandeville, Geoffrey de, grants manor of Eia to Westminster, 31.
 Manor of Eia or Eye next Westminster, The, 31.
 Mantell, Dr., on the Coombe-rock, 517.
 Manuscripts: Arabic numerals in, 138, 139; dating of, 139.
 March, Countess of: mentioned in wardrobe account, 498; Earl of, mentioned in wardrobe account, 498.
 Marchetti collection of drawings, 59, 60.
 Marcia, coins of: Caerwent (Mon.), 430; Wookey Hole (Som.), 578, 591.
 Marcus Aurelius, Arabic numerals on statuette of, 148.
 Maret, R. R., Pleistocene Man in Jersey, 449.
 Market Overton, Rutland: Notes on an Anglo-Saxon Cemetery at, 481; Supplementary Note on the Gold Bracteate and Silver Brooch, 491; date of cemeteries, 488.
 Markland, James Heywood, fifteenth Director of the Society of Antiquaries, 73.
 Martin's Bank, tallies from, 372.
 Mary II, Queen, provides furniture for altar, throne stalls, and pulpit at Canterbury, 361.
 Masbury (Som.), earthworks, 567.
 Mason, Canon, owner of picture of Canterbury choir, 353.
 Maud, Queen, tomb of at Westminster, 93.
 Maumbury Rings (Dorset): deer-horn pick, 121; flint shafts, 122.
 Maximianus, coins of, Caerwent, 18, 438.

Maximilian, Duke of Bavaria, inscription in album, 278.
 Maximus, coins of, Caerwent (Mon.), 13, 417.
 Medals: Arabic numerals on, 146, 147; royal gold, offered to Society of Antiquaries in 1828, 73.
 Mediaeval Personal Ornaments from Chalcis in the British and Ashmolean Museums, 391.
 Mercers' Company and St. Paul's School, 202, 203, 204, 206, 207, 231.
 Mercers' School, origin of, 201.
 Merian, Mattheus, illustrations by in albums, 258.
 Merula, Paulus, inscription of in album, 283.
 Mesvin, mining tools, 112.
 Middlesex, *see* Hampton Court, London, Ossulston.
 Milagro mine, Spain, 120.
 Mildenhall, Suffolk, 515.
 Milles, Dean, President of the Society of Antiquaries, 69.
 Milman, Henry Salusbury, twenty-third Director of the Society of Antiquaries, 79.
 Mines and Mining: ancient principles of, 102; calcite, 117; copper, 117, 119; flint, 108, 113, 114, 115, 116; lead, 567; plans, 111; salt, 117, 120; tin, 117, 118; tools, 112, 118.
 Mining Operations of the Ancients, The Use of the Deer-horn Pick in the, 101.
 Missaglia, Antonio da, armourer's mark of, 388.
 Moderators of the Society of Antiquaries, 59.
 Molitor, Joannes: album of, 276; arms of, 274.
 Monantheuil, Henry, inscription of in album, 283.
 Monasteries, Byzantine churches and, Cyprus, 127.
 Monmouthshire, *see* Caerwent, Whitewall.
 Monster (tavern), the, Pimlico, suggested origin of name, 37, 49.
 Mont-Saint-Michel, abbey church, 553, 555, 559, 561.
 Montivilliers, abbey church, 554, 555, 556.
 Morion, Chalcis armour, 382.
 Mortarium: Caerwent (Mon.), 426; Ulrome (Yorks.), 601.
 Mortimer, Sir Thomas, mentioned in wardrobe account, 498.
 Mortlake (Surrey), pottery, 340, 342, 348.
 Mosque: Famagusta, Cyprus, 128; Nicosia, Cyprus, 134.
 Mould, Caerwent, 424.
 Mousterian: culture, 520; in Jersey, 449 ff.; flint-working, 529; implements, Jersey, 449 ff.; Northfleet, 521, 524-7; Sangatte, France, 531; industry in North France, 528; period in Jersey, 476; pre-, period in Jersey, 476; post-, period in Jersey, 477; types, evolution of, 528 ff.; workshop at Busigny, 532.
 Munck, M. de, on flint-mines, 103, 105, 106.

Munro, Robert, On a Bronze Age Cemetery and other antiquities at Largs, Ayrshire, 239.
Munsterberg, arms of Duke of, 297.

N

Nails, relic of The, in triptych from Stavelot, 21.
Nails: iron, Caerwent, 419, 443; Silchester, 330; Wookey Hole (Som.), 577.
Narborough, arms of, 300.
Neanderthal type, 456.
Necker, David de, illustrations by in albums, 268.
Needles, bone, Wookey Hole (Som.), 579.
Neefs, Pieter, picture of Canterbury Choir wrongly ascribed to, 363.
Neidhart, arms of, 272.
Neolithic: implements, Jersey, 468, 474; flint-mining, 102; Pottery, The Development of, 340; Peterborough, 336; remains, Wookey Hole, 568.
Nero, coin of, Caerwent (Mon.), 426.
Nerva, coin of, Caerwent (Mon.), 424.
Newbury (Berks.): lake-dwellings, 608; animal remains, 608; flint implements, 608.
Newton, Alfred, on lake-dwellings at Thetford (Norfolk), 608.
Newton, E. T.: on animal remains, Caerwent, 411, 417; Northfleet, 519; Wookey Hole, 590; on vegetable remains, Caerwent, 448.
Neyte, Westminster: manor of, 33; history of, 38 ff.; manor house, site of, 34, 35, 36, 37; origin of name, 38; surrendered to king, 45.
Nicholas, St., altar to at Westminster, 88.
Nicolle, E. T., on Jersey caves, 449.
Nicosia, Cyprus, 130, 131, 132, 134.
Nointel (France): mining tools, 112, 118; plan of mines at, 111.
Norfolk, *see* Castle Acre, Cromer, Kenninghall, Norwich, Thetford.
Norman, Philip, on history of Cyprus, 126.
Norman architecture: in England, 543 ff.; evolution of, 553.
Norse language, Jersey, 450.
Northamptonshire, *see* Peterborough.
Northfleet, Kent: A Palaeolithic Industry at, 515; analogy of culture with Le Moustier, 525; animal remains, 519; geology, Mr. Clement Reid on, 516; implements, *see* Implements.
Northumberland, *see* Eglingham.
Norwich Cathedral, 557.
Nottinghamshire, *see* Southwell, Tuxford.
Numerals: Arabic, On the Early Use of, in Europe, 137; direction of writing, 149; Greek system of, 149; mixture of Roman and Arabic, 149.

O

Obersdorffer, arms of, 268.
Obourg, Belgium, flint-mining at, 103, 105, 106, 111, 119.
Opsimathes, Johannes, album of, 282.
Opus signinum, Caerwent, 419.
Organs, Canterbury Cathedral, 358, 363; cost of, 364; early notices of, 365; loft, 365; portable Elizabethan, 365.
Orkney, bone adzes, 600.
Orleans Cathedral, 560.
Ornaments, Mediaeval personal from Chalcis, in the British and Ashmolean Museums, 391.
Osbert, legend of King, 91.
Ospringe, Kent, flakes from, 524.
Ossulston hundred, 40.
Ouen, St., Cotte de, Jersey, exploration of, 462.
Overloop, M. van, on Spiennes flint-mines, 106.
Oxford: gold bracteate, 491; University, date of founding, 196.
Oxfordshire, *see* Brighthampton, Dorchester, Oxford.

P

Paintings: Arabic numerals on, 147 n.; oil, of Canterbury Cathedral choir, 353; wall, Canterbury, 356.
Palaeolithic: Industry at Northfleet, Kent, 515; implements, *see* Flint, Stone.
Palatine, Count, inscription in album, 298; privileges of, 271 n.
Papho temples, Cyprus, 127.
Parclose screens, Canterbury, 357.
Paste beads, Market Overton, 483.
Patina, Northfleet flints, 527.
Pauw, M. de, on Spiennes flint-mines, 106.
Pavements: Caerwent, 6, 405, 407, 412, 415, 416, 418, 421, 425, 428; Canterbury, 362; Whitewall Brake (Mon.), 406 n.
Peace, Launcelott, builds Canterbury organ, 364.
Pearl beads, imitation, Market Overton, 483.
Peat, Jersey, 474.
Peers, C. R., On the Stone Bridge at Hampton Court, 309.
Pepys, Samuel: President of Royal Society, 354; paid money by tally, 371; visits Neyte, 46.
Percival, Charles Spencer, twenty-second Director of the Society of Antiquaries, 79.
Peterborough (Northants): bone pin, 335; Cathedral, 555, 557, 560; pottery, 334, 335, 336, 337, 338, 339, 341, 344, 347; Prehistoric Pits at, 333; sling-stone, 335.

- Petticoat, origin of, 502.
 Pewter : dish, Caerwent (Mon.), 410 ; pots, Caerwent (Mon.), 407.
 Pickering, Yorkshire, lake-dwellings, 608 ; animal remains, 608 ; human remains, 608 ; pottery, 608.
 Pick, deer-horn : in mining operations of the ancients, 101 ; Wookey Hole (Som.), 582.
 Pile-dwellings : Sweden, 346 ; *see also* Lake-dwellings.
 Piles : pointed by stone and bronze implements, Ulrome (Yorks.), 601 ; Thetford (Norfolk), 609 ; Ulrome (Yorks.), 596, 598, 600, 601, 605.
 Pilgram, Heinrich, album of, 280.
 Pins : bone, Peterborough (Northants), 335 ; Silchester (Hants), 325, 326 ; Wookey Hole (Som.), 579 ; bronze, Leagrave (Beds.), 487 ; Market Overton (Rutland), 487 ; Silchester (Hants), 325 ; Wookey Hole (Som.), 579 ; split, iron, Wookey Hole (Som.), 576.
 Pipes, water, Caerwent (Mon.), 420.
 Pits, prehistoric, at Peterborough, 333.
 Pitt-Rivers, General, on neolithic pottery, 342.
 Plane, iron, Caerwent, 445.
 Plaster, coloured, Caerwent (Mon.), 409, 411, 414, 418, 419, 424, 428, 432, 439, 440.
 Plaques, Chalcis, 396, 398, 399.
 Pleistocene Man : in Jersey, 449 ; relation of to post-pleistocene man, 467.
 Plumb-bob, lead, Caerwent, 407.
 Pocock, Mr., on flints at Grays, 531.
 Porskjae moor find, 484.
 Postumus, coins of, Caerwent, 421, 426.
 Pottery : neolithic : Achnachree (Argyleshire), 340 ; Biggin (Derby), 342 ; Châtillon (Switzerland), 343 ; the development of, 340 ; Finland, 346 ; food-vessels, 347, 348 ; Furfooz calcite mine, 118 ; Haddingtonshire, 348, 349 ; Jersey, 474 ; Kennet, West, barrow, 343 ; Longcliffe (Derby), 341 ; Mortlake (Surrey), 340, 342, 348 ; ornamentation of, 335-9, 340 ff. ; Peterborough, 334-40, 344, 347 ; Sweden, 346 ; Swell, Upper (Glos.), 347 ; Wallingford (Berks.), 341 ; Yorkshire barrows, 341 ; Bronze Age : Largs, Ayrshire, 239-44, 247 ; Early Iron Age : Barmston (Yorks.), 607 ; Gransmoor (Yorks.), 606 ; Pickering (Yorks.), 608 ; Sweden, 610 ; Ulrome (Yorks.), 598, 600, 601, 605, 606 ; Wookey Hole, 570, 573, 585 ff. ; Roman : Caerwent (Mon.), 2, 6, 9-12, 14-19, 409-12, 414-17, 419, 421-3, 425, 426, 428-31, 435-40, 442, 443, 445 ; Silchester, 321, 324-7, 329, 330 ; Wookey Hole, 571, 572 ; kilns, Silchester, 327-9 ; stamps, Caerwent, 410, 423, 425, 430, 431, 436, 439 ; Silchester, 325, 326 ; Anglo-Saxon : Market Overton (Rutland), 481, 483 ;
 hone, made of, Wookey Hole (Som.), 585 ; tools, Wookey Hole (Som.), 577, 583.
 Pramer, Andreas, album of, 304.
 Prestwich, Sir Joseph, on Sangatte and Brighton cliffs, 531.
 Price, Frederick George Hilton, twenty-fifth Director of the Society of Antiquaries, 79.
 Priddy (Som.), beads, glass, 567 ; human remains, 567 ; lead mining, 567 ; Roman remains, 567 ; spade shoes, 577.
 Privy Council, decision with regard to burial of King Henry VI, 540.
 Probus, coin of, Caerwent (Mon.), 409.
 Pulpit, Canterbury Cathedral, provided with new furniture by Queen Mary II, 561.
 Pulpitum, Canterbury Cathedral, 357.
 Pyx, chapel of, Westminster, hoard of tallies found in, 367.
- Q
- Quaternary : history of Jersey, 475 ; period, length of, 532.
 Quern : Caerwent (Mon.), 17, 409, 413, 445 ; Wookey Hole (Som.), 581 ; beehive, Wookey Hole, 572.
- R
- Radyngton, Sir Baldwin, mentioned in wardrobe account, 498.
 Raised beaches of Jersey, 464, 469, 476.
 Raper, Matthew, thirteenth Director of the Society of Antiquaries, 72.
 Ratisbon, arms of Bishopric of, 278.
 Rayleigh, Essex, bell from, 142 n.
 Read, C. H., On a Triptych of the Twelfth Century from the Abbey of Stavelot in Belgium, containing portions of the True Cross, 21.
 Receipt Roll, a register of tallies, 368.
 Reid, Clement : on the Coombe-rock, 519 ; on flints from Grays, 531 ; on the geology of Northfleet, 516 ; on seeds from Caerwent, 19 ; on seeds from Wookey Hole, 590.
 Reims, St. Rémi, 560.
 Reindeer : presence of in Britain in neolithic times, 604 ; remains of in Jersey, 454.
 Reiss, arms of, 274.
 Remi, Bishop : builder of first church at Lincoln, 544 ; death of, 545.
 Rendcombe Church (Glos.), Arabic numerals at, 142 n.
 Reuchl, arms of, 268.
 Rey, and de Vogüé, MM., on Cypriote monuments, 126.

Rhinoceros: remains of in Jersey, 454; Northfleet (Kent), 520.
Rhuddlan, statute of, regarding tallies, 374.
Rice, R. Garraway, 524 n.
Richard II, King: gives money to build Canterbury high altar, 359; livery colours, 503; wardrobe account of, 497.
Rindfleisch, Daniel, album of, 257.
Rings: bronze, Market Overton (Rutland), 487; Wookey Hole (Som.), 577, 578; gold, Chalcis, 392 ff.; Market Overton, 488; iron, tethering, Wookey Hole (Som.), 576; jet, Ulrome (Yorks.), 602; lead, Caerwent, 438.
Rivets, bronze, Wookey Hole (Som.), 577.
Robinson, Very Rev. Joseph Armitage, The Church of Edward the Confessor at Westminster, 81.
Rokewode, John Gage, sixteenth Director of the Society of Antiquaries, 74.
Roman remains: Caerwent (Mon.), 1, 405; Charterhouse-on-Mendip (Som.), 567; Cheddar (Som.), 567; Cyprus, 127, 132; Lydney (Glos.), 4; Marble Arch (London), 40; Priddy (Som.), 567; Shepton Mallet (Som.), 567; Silchester, 317; Spain, 120; Westminster Abbey, 99; Ulrome (Yorks.), 602, 605-7; Wookey Hole (Som.), 570-2, 575 ff., 591.
Romano-British, Late-Celtic and, cave-dwelling at Wookey Hole, Somerset, 565.
Romsey Abbey (Hants), 559.
Rosenheim, Max, The Album Amicorum, 251.
Rosetta stone, The, 71.
Roth, J. T. von, album of, 301.
Rothley Temple (Leics.), cruciform brooch from, 486.
Rouge, Ulrome lake-dwelling (Yorks.), 602.
Round Hill lake-dwelling, Ulrome (Yorks.), 605.
Royal Society: association between and Society of Antiquaries, 78; Johnson's picture of Canterbury exhibited by him before the, 354; Pepys, President of the, 354.
Rubens, Peter Paul, inscription in album, 286, 287.
Rümelin, Andreas, album of, 254.
Runge, Heinrich, album of, 304.
Rutland, *see* Luffenham, Market Overton.
Rutot, M.: on glaciations of North of France, 475; on the Stone Age population of Europe, 530.
Rutton, W. L., The Manor of Eia, or Eye next Westminster, 31.

S

St. Albans Abbey (Herts.), 555, 556, 557, 558, 559.
Saint-Georges-de-Boscherville (Normandy), abbey church, 554, 555, 556, 557, 558, 559, 560, 561.

St. Paul's School (London): before Colet, 191; almoner, 217, 220; almonry, 214; almonry boys, 214, 219, 222, 223; Boy Bishop, 214, 218, 227; chancellor of, 215, 216, 217, 219; chancellor's school, 219, 226, 228; choir school, 214, 216; documents regarding, 193, 194, 196, 197, 198, 200, 201, 202, 203, 204, 211 ff.; earliest direct record of, 192; made a free school by Colet, 209; master, 203, 211, 214, 217; monopoly of, 212; names of, 205, 206; position of, 193; statutes, Colet's, 230 ff.
Salades, Chalcis armour, 383, 385.
Salin, Dr.: on bracteates, 491 ff.; on Teutonic zoomorphic ornament, 494.
Salonina, coin of, Wookey Hole (Som.), 591.
Salt-mining, 117, 120.
Salzberg, salt-mining, 120.
Samian pottery, Caerwent (Mon.), 2, 6, 9, 10, 14, 15, 17, 19, 410, 415, 416, 422, 423, 425, 426, 430, 431, 435-9, 442, 443.
Sandals: Caerwent (Mon.), 417; Wookey Hole (Som.), 590.
Sandars, Horace W., On the Use of the Deer-horn Pick in the Mining Operations of the Ancients, 101.
Sandoukopetra, Cyprus, 127.
Sandys, Col.: destroys Canterbury high altar screen, 359; destroys Canterbury organ, 365.
Sangatte, France: Le Moustier implements at, 531; cliffs, resemblance to those at Brighton, 531.
Santa Croce Church, Cyprus, 127.
Sarcophagus, Varosha, Cyprus, 132.
Sardinia, *see* Abbasanta.
Sarre, Kent, gold bracteate, 491.
Saunders, George, on Westminster, 33.
Saunders, Messrs. Dancaster and, explore Cotte de St. Brelade, 451.
Saws, iron, Wookey Hole (Som.), 576.
Saxby, Leicester, cruciform brooch from, 486.
Saxon: buckle, bronze, Caerwent (Mon.), 407; cemetery at Market Overton (Rutland), 481.
Scargill-Bird, Mr., on king's wardrobe, 497.
Schmoll, Matheus, album of, 286.
Schonenburg, arms of, 272.
Schools: attached to cathedrals, 191; monopoly of, 194; *see also* St. Paul's.
Schopper, Andreās, album of, 256.
Schott, Heinrich, album of, 255.
Schretel, arms of, 274.
Schwannbergk, arms of, 296.
Scotland: neolithic pottery, 340; *see also* Argyleshire, Arran, Ayrshire, Berwick, Galloway, Haddingtonshire, Haylee, Kilbride, Largs, Orkney.

- Scott, Sir Gilbert, finds ancient piers at Westminster, 97.
- Screens, Canterbury Cathedral, 358-61.
- Scrope: Sir Stephen le, mentioned in wardrobe account, 498; Sir William le, mentioned in wardrobe account, 498.
- Seals: Arabic numerals on German, 144; of the Society of Antiquaries, 69; of Baden, 145; of Philippe de Clèves, 144 *n.*; of Denis, Abbé de Loos, 144 *n.*; of Gars, 145; of Otto von Henneberg, 145; of Gottfried von Hohenlohe, 144; of Marchekk, 145; of Markt Veldkirchen, 145; of Munich, 144 *n.*; of John of St. Moritz, 145; of George, Duke of Saxony, 144 *n.*; of Trostberg, 144; of Weissenhorn, 144 *n.*
- Seeds: Caerwent, 15, 19, 448; Wookey Hole (Som.), 590.
- Septimus Severus, coin of, Silchester, 325.
- Shafts, form of, flint-mining, 109.
- Sharpe, Prebendary Gregory, ninth Director of the Society of Antiquaries, 68.
- Shears, iron, Caerwent, 420, 439.
- Shefford (Beds.), saucer brooch from, 487.
- Shells: Caerwent (Mon.), 406, 408, 425; Jersey, 474; Wookey Hole (Som.), 591.
- Shepton Mallet (Som.), Roman remains, 567.
- Shield bosses, Market Overton (Rutland), 482.
- Shovel, wooden: Carnon tin-mine, 118; Wookey Hole (Som.), 589.
- Sibmacher, Hans, illustrations by in albums, 260.
- Sickle, iron, Wookey Hole (Som.), 576.
- Signatures, suggested origin of flourishes in, 261.
- Silchester: Excavations about the Site of the Roman City of, 317; Notes on Discoveries in the Outer Entrenchment, 330; animal remains, 325; bone objects, 325, 326; bridging arrangements, 323; bronze objects, 325, 326, 329; burials, 318, 330; coins, 326; deer-horn picks, 101, 121; glass objects, 326; human remains, 325; huts, 331; insect remains, 445; iron objects, 326; kilns, 327-9; pottery, 321, 324, 325, 326, 327, 329, 330; restoration of plan of, 320; roads, 331; saggars, 326.
- Silver objects: armlets, fragments, Market Overton (Rutland), 484; bracteates, Market Overton (Rutland), 484; brooches, Market Overton (Rutland), 484, 488, 491, 493 *ff.*; clasps, Market Overton (Rutland), 484; coin, Wookey Hole (Som.), 578; ear-ring, Wookey Hole (Som.), 578; plates on brooches, Market Overton (Rutland), 485; torc, Market Overton (Rutland), 483, 496; wire frame on brooch, Market Overton (Rutland), 486.
- Sinel, J., on Jersey caves, 449; and Dancaister, Messrs., explore Cotte de St. Ouen, Jersey, 463.
- Skeletons, human: Biggin (Derby), 342; Caerwent (Mon.), 444; Largs (Ayrshire), 247, 248; Obourg flint-mine, 105; Priddy (Som.), 567; Strépy, Belgium, 105; Wookey Hole (Som.), 575.
- Skipsea drain, Ulrome, 596.
- Skulls, human: Caerwent (Mon.), 411, 434; Carnon (Cornwall), 118; Jersey, 472; Silchester (Hants), 325; Ulrome (Yorks.), 605.
- Sleaford, Lincs.: bucket mountings, 482; clasps, 484.
- Slick-stones, Wookey Hole (Som.), 585.
- Sling-stone, Peterborough (Northants), 335.
- Smith, Reginald A.: The Development of Neolithic Pottery, 340; Lake-dwellings in Holderness, Yorks., discovered by Thomas Boynton, Esq., F.S.A., 593; A Palaeolithic Industry at Northfleet, Kent, 515.
- Smithfield, London, St. Bartholomew's, disputations at, 196, 197.
- Smyth, Admiral William Henry, eighteenth Director of the Society of Antiquaries, 75.
- Solis, Virgil, illustrations of in albums, 253, 260.
- Somerset House, rooms at, allotted to Society of Antiquaries, 70.
- Somerset, *see* Banwell, Charterhouse, Cheddar, Dolberrow, Masbury, Shepton Mallet, Priddy, Wells, Wookey Hole, Wooton.
- Somerset, yale supporter of dukes of, 314.
- Southwell Cathedral, 559.
- Spades: Priddy (Som.), 577; Wookey Hole (Som.), 573, 577, 589.
- Spain, copper mining, 119.
- Spalding, Gentlemen's Society of, 65.
- Spears: iron, Caerwent, 421, 434, 439; Market Overton (Rutland), 481; Wookey Hole (Som.), 575.
- Spelman, Sir Henry: arms of, 300; inscription in album, 300.
- Spiennes: flint-mines, 106, 107, 110, 114, 115; flint tools, 103; pick from, 111.
- Spindle-whorls: Caerwent (Mon.), 411; Wookey Hole (Som.), 580.
- Spon, Johannes, album of, 262.
- Spurrell, F. C. J., on implements from Northfleet, 522.
- Staffordshire, *see* Wolverhampton.
- Stalls, Canterbury Cathedral, 356, 358; new furniture provided by Queen Mary II, 361.
- Stamps, Sebastian von, album of, 268.
- Stamps, potters', *see* Pottery.
- Stavelot, Belgium, Triptych with portions of the True Cross from, 21; history of, 26.

Statues, Caerwent, 14, 16.
 Stature, Wookey Hole inhabitants, 585.
 Steelyard, bronze, Caerwent, 413.
 Stegeman, arms of, 297.
 Stephenson, Mill, *see* Hope, W. H. St. John.
 Stimmer, Tobias, illustrations by in albums, 260, 276.
 Stockport (Lancs.), school at, 207.
 Stoke, West (Sussex), neolithic flint-mines, 122 *n*.
 Stone Bridge at Hampton Court, The, 309.
 Stone implements: Barmston (Yorks.), 607; Jersey, 449 ff.; Largs (Ayrshire), 242, 245; Newbury (Berks.), 608; Northfleet (Kent), 515 ff.; Ospringe (Kent), 524; Ulrome (Yorks.), 598, 600, 602, 605, 606; Wookey Hole (Som.), 585.
 Stone objects: coffin, Caerwent (Mon.), 444; querns, Caerwent, 17, 409, 413, 445; Wookey Hole (Som.), 572, 581; weight, Caerwent, 438.
 Stow, on London schools, 196.
 Straalen, Mr. Van, on Spanish copper mines, 119.
 Strangford, Viscount, nineteenth Director of the Society of Antiquaries, 76.
 Strépy, Belgium, skeleton found at, 105.
 Stubbs, Bishop, on Cypriote history, 135.
 Stukeley, Dr., Secretary of Society of Antiquaries, 67.
 Submergence, Jersey, 476, 477.
 Suffolk, *see* Fressingfield, Grimes Graves, Ipswich, Mildenhall.
 Sun, gilded, at Canterbury Cathedral, 363.
 Surcoat, 501.
 Surrey, *see* Chertsey, Mortlake.
 Sussex, *see* Brighton, Chichester, Cissbury, Stoke.
 Swanscombe (Kent), implements from, 516.
 Swastika, on brooch from Market Overton, 487.
 Sweden: animal remains, 610; lake-dwellings, 346, 609; pottery, 346, 610.
 Swell, Upper (Glos.), pottery, 347.

T

Tallies: Exchequer, 367; abolition of, 368; addition of term and year to, 375; angles of cutting, 374; change in usage of, 369; *contra*, 376; cutting of, 376 ff.; descriptions of, 376 ff.; destruction of, 369; discounted by goldsmiths, 371; foil of, 375; fraud, cases of, 374; Jews', 378; from Martin's Bank, 372; meaning of, 367; modern, 368; names of parts of, 374; offices connected with, 369; payments made by, 371; private, 378 ff.; *pro* and *sol'* development, 375; regulations regarding, 374; used for purposes of issue, 369; wording on, 373; wood of which made, 373.
 Tally, bone. Wookey Hole (Som.), 583.

Talman, John, first Director of the Society of Antiquaries, 59.
 Tamassos tomb, Cyprus, 126.
 Tapestry in Victoria and Albert Museum, Arabic date on, 146.
 Taplow, bronze-lined bucket from, 483.
 Taylor, Ven. John, eighth Director of the Society of Antiquaries, 67.
 Teeth: pleistocene human, Jersey, 455; of *Homo Breladensis*, measurements of, 457; affinity with those of *Homo Heidelbergensis*, 456.
 Temples: Caerwent (Mon.), 4, 439; Papho, Cyprus, 127.
 Tesserae, *see* Pavements.
 Tetricus, coins of, Caerwent (Mon.), 13, 409, 412, 414, 420, 421, 431.
 Teutonic Order: arms of, 279; master of, 279.
 Textiles, Chalcis, 399 *n*.
 Thames, bone adze from, 599.
 Thau, Johann von, album of arms of, 273.
 Theodora, coins of, Caerwent (Mon.), 412, 414, 417, 421.
 Theodosius, coins of, Caerwent (Mon.), 13.
 Thetford, Norfolk: animal remains, 609; lake-dwellings, 608; piles, 609.
 Thirty Years' War, beginning of, 296.
 Threshold stones, Caerwent (Mon.), 415, 418, 430, 437.
 Throne, Archbishop's, Canterbury, provided with new furniture by Queen Mary II, 361.
 Thurn, Von, arms of, 296.
 Thurnam, Dr., opens West Kennet barrow, 343; on West Kennet pottery, 344.
 Tiles, Caerwent, 405, 413, 414, 424, 428, 437, 439.
 Tillotson, Dean, censured for removing gilded sun at Canterbury, 363.
 Tin: Wookey Hole (Som.), 580; mining, 117, 118.
 Tinder, Ulrome (Yorks.), 610.
 Titus, coin of, Wookey Hole (Som.), 591.
 Tombs: Cyprus, 126; Westminster Abbey, 87, 92.
 Torches, mining, 119, 121.
 Torcs: bronze, Bornholm, 496; silver, Ipswich, 483; Market Overton, 483, 496.
 Tortoise-shaped cores, Northfleet, 523.
 Trajan, coins of: Silchester (Hants), 326; Wookey Hole (Som.), 591.
 Traquair, Ramsay, on Italian Armour from Chalcis, 381.
 Trebonianus Gallus, coin of, Caerwent (Mon.), 2.
 Trieste, arms of John, Bishop of, 279.
 Triptych of the Twelfth Century from the Abbey of Stavelot in Belgium, containing portions of the True Cross, 21.
 Trockau, Ernst Gross von, album of, 284.

Troodos, Cyprus, domestic architecture, 130.
 Troup, R. D. R., *see* Balch, H. E.
 Tucher: Andreas, album of, 267; Stephanus, album of, 305.
 Turks: occupation of Chalcis, 382; of Cyprus, 134.
 Tuxford (Notts.), brooches from, 485.
 Tweezers, bronze, Wookey Hole (Som.), 578.
 Twyford (Leics.), clasps from, 484.
 Tybourne, the (London), 31, 32, 40, 41.

U

Ulrome: lake-dwelling, Yorks., 596; animal remains, 603, 605; antler tools, 603; bone adzes, 599; bronze lance-head, 603; dates of, 600; flints, 600, 602, 605, 606; human remains, 598, 605; jet armlet, 606; jet ring, 602; mace-head, 606; nature of timber used, 605; piles, 596, 598, 600, 601, 605; pointed by bronze implement, 601; by stone implements, 601; rouge found at, 602; pottery, 598, 600, 602, 605, 606; stages of, 598; stone celt, 606; stratification, 596; tinder, 610.
 Upchurch ware, Caerwent (Mon.), 10, 12.
 Urbs Roma, coin of, Caerwent (Mon.), 421.
 Urns: Caerwent (Mon.), 414, 417, 421, 436; Largs (Ayrshire), 239, 240, 241, 242, 243, 244; Silchester (Hants), 330.

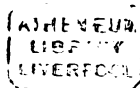
V

Vache, Sir Philip la, mentioned in wardrobe account, 498.
 Valennes, plan of mines, 111.
 Valens, coins of: Caerwent (Mon.), 2, 12, 414, 415, 419, 426, 435; Wookey Hole (Som.), 592.
 Valentinian, coins of: Caerwent (Mon.), 13, 412, 420, 421; Wookey Hole (Som.), 591, 592.
 Vault of King Henry VI, 535.
 Vegetable remains, Caerwent (Mon.), 15, 19, 448.
 Venetian architecture, Cyprus, 129 ff.
 Venta Silurum, Excavations at Romano-British City of, 1, 405.
 Vertue, George, engraver to Society of Antiquaries, 67.
 Vespasian, coins of: Caerwent (Mon.), 10, 435; Wookey Hole (Som.), 591.
 Victor, coins of, Caerwent (Mon.), 13, 417.
 Victorinus, coins of: Caerwent (Mon.), 5, 12, 406, 414, 444; Wookey Hole (Som.), 591.
 Vienna: arms of Scots monastery at, 274; brigandine from, 388.
 Visconti, inventory of jewels of, 403.
 Vitalis, Abbot, his work at Westminster, 86.

W

Waistcoat, origin of, 502.
 Walbott, Anton, album of, 266.
 Wallingford (Berks.), pottery, 340.
 Wall paintings, Canterbury, 356.
 Walpole, Horace, Fellow of the Society of Antiquaries, 68.
 Ward, John, seventh Director of the Society of Antiquaries, 66.
 Wardrobe Account of 16-17 Richard II, 1393-4, 497.
 Ware, Abbot, of Westminster, customary of, 88.
 Warwick school, date of, 192.
 Warwickshire, *see* Longbridge, Warwick.
 Waterhouse, C. O., on Caerwent insect remains, 445.
 Water supply, Cypriote cities, 134.
 Way, Albert, seventeenth Director of the Society of Antiquaries, 74.
 Weights: lead, Caerwent (Mon.), 407; stone, Caerwent, 438; units of, 574.
 Weissenhorn, arms of, 272.
 Wells Cathedral (Som.), Arabic numerals at, 141.
 Welser: B. and J., albums of, 272; Marcus Antonius, album of, 301; arms of, 301.
 Wentworth, Sir Peter, arms of, 300.
 Westbourne, the (London), 31, 32, 52.
 Westminster Abbey: The Church of Edward the Confessor at, 81; Abbot and Convent of, claim body of King Henry VI, 539 ff.; altars, 88, 89; Anglo-Saxon boundaries of estate of, 32; dimensions of nave, 95; Edward the Confessor's Church, 81 ff., 543, 554, 555, 557, 558; arrangement of, 87; documentary evidence for, 82 ff.; MS. description of building of, 83; unfinished at Confessor's death, 85 ff.; remains of, notes on the existing, 97; remains of, 81; hoard of tallies found in Chapel of Pyx, 367; Lady Chapel, date of, 90; Litlington, Abbot, buildings by, 41; Norman work in, 94; porch, 85; Roman building, remains of a, 99; Saxon church, 82; spoliation of, 44, 45; staircases in transepts, 95; suppression of, 35; tombs, royal, in, 87, 92, 93; towers, position of western, 96; Abbot Vitalis's work, 86; Abbot Ware's customary, 88.
 Westminster, Manor of Eia, or Eye next, 31.
 Westminster, St. Margaret's, boundaries of parish, 32.
 Westminster School, date of, 196.
 Wettengel, arms of, 297.
 Whale, femur of, Caerwent, 427.
 Whitewall Brake (Mon.), pavement, 406.
 Whitewashing, Canterbury Choir, 356.
 Widgell Hall (Herts.), chimney-piece, date on, 142 ff.

- Wiliczky, Johannes, album of, 293.
 Willett, Ernest, 518.
 William the Conqueror erects tomb of Edward the Confessor, 87, 92.
 Willoughby of Parham, Lord, President of Society of Antiquaries, 67.
 Wiltshire, *see* Avebury, Kennett, Knowle.
 Winchester: Cathedral, 555, 558, 559, 560, 561; College, leads in introduction of Greek into schools, 208; St. Cross, Arabic numerals, 141; St. Cross, date on Campden brass, 142 *n*.
 Windsor: Discovery of Remains of King Henry VI in St. George's Chapel, 533; burial of King Henry VI at, 539, 540, 541.
 Wingfield, Major, 489.
 Winwood, Sir Ralph, inscription in album, 287.
 Wolverhampton (Staffs.), school at, 207.
 Wood-carving, Cypriote, 133.
 Wood Ditton (Cambs.), dated bells, 142 *n*.
 Wooden objects: bowls, Wookey Hole (Som.), 573, 589; dagger handle, Wookey Hole (Som.), 575; spade, Wookey Hole (Som.), 589.
 Woodruff, Mr., on Canterbury high altar screen, 351.
 Woodward, H. B., on flints at Grays, 531.
 Woodyates, deer-horn picks, 121.
 Wookey Hole (Som.), Late-Celtic and Romano-British Cave-dwelling at, 565; animal remains, 590; bone objects, 576, 581; bronze objects, 575, 577; coins, 570, 573, 591; currency-bars, 574; Celtic remains, 575 ff.; geological formation, 565; glass bead, 567; hearths, 573; human remains, 570, 575, 583; iron weapons and tools, 573, 574, 575; lamp, 581; leather objects, 590; neolithic remains, 568; pottery, 570, 573, 585 ff.; querns, 572, 581; Roman remains, 570-2, 575 ff.; seeds, 590; shells, 591; wood objects, 573, 589.
 Wooton, North (Som.), dated bell at, 142 *n*.
 Wor barrow, pottery, &c., 342.
 Worcestershire, *see* Elmley.
 Worth, R. N., on Cornish tin-mining, 118.
 Wright, Dr. W., on skull from Ulrome (Yorks.), 598.
- Y
- York: St. Mary, 543; St. Peter's School, date of, 192.
 Yorkshire: barrows, pottery in, 341; *see also* Barmston, Brunton Hill, Furze, Gransmoor, Holderness, Macclesfield, Pickering, Round Hill, Ulrome, York.
- Z
- Zäh, Sebastian, album of, 276.
 Zealand, bronze torcs, 496.
 Zeck, Sebastian, inscription by in album, 277.
 Zoomorphs: on bracteates, 491 ff.; Market Overton brooches, 485, 494.



118

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